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A New Theory of the Production and Regulation of Insulin

GEORGE H. TUTTLE, M.D.

South Acton, Mass.

According to the present day belief of the diabetic world and physiologists in general, all of the insulin used in the body is produced by the pancreas and its islands of Langerhans. Although research workers have found insulin and glycogen everywhere in the body, the theory has always held that it was produced by the islands of Langerhans, absorbed into the blood vessels of the pancreas and carried by them and other vessels of the general circulation to the various tissues where they were found by the physiological chemist. Under this theory the cause of diabetes was continually looked for in pathological changes in the islands of Langerhans. A deficiency in the insulin production, or a fall in tolerance for carbohydrates in the diet, was ascribed to a failure of the pancreas to keep up its supply of insulin through these islands exercising their normal functions. And yet the autopsies of Labbé and Root and Warren drove these authors to the final conclusion that the severity of the disease never corresponded to the changes in the islets. For instance, in deaths from coma, where the disease had been of short duration, the pancreatic cells were practically normal. I have never been satisfied with our present theories and have felt that there must be somewhere a defect in our understanding of the physiology of insulin production and the function of the pancreas.

Since carbohydrate metabolism or the oxidation of sugar goes on in the single-celled amoeba, as well as in the highest organized mammal, and this without a pancreas, and since in fishes of the lower orders, independent islets, encapsulated, and not connected with the

pancreas, have been proved by McLeod and Campbell and others to contain large amounts of insulin, it seems certain that the pancreas is not the only source of insulin, but has been developed to its higher state in man because an added function, made necessary by the regular meals of modern civilization in place of the gregarious feeding of wild animals, has been given to it. Also modern research, as stated by Joslin, has proved that in completely depancreatized dogs, insulin is still produced in a little more than half the usual amount, in spite of the complete absence of the pancreas. This may be called the cellular insulin, and it alone is not sufficient to prevent the dog from becoming diabetic. It is necessary then that the pancreas should supply the deficiency of insulin, and moreover, that it should be prepared to pour out this extra amount at meal time when a large amount of absorbed carbohydrates enters the blood. In order to do this, the pancreas must accumulate a sufficient supply and hold it ready for the demand when it comes. Something must hold this insulin in the pancreas, and as many experiments have proved that trypsinogen, produced side by side with insulin from the same blood supply, inactivates but does not destroy insulin, it is evident that this is the agent which holds back the supply of insulin and allows it to accumulate sufficiently to meet the demands of the rising blood sugar immediately following the meal. In addition to this, the release of the insulin from the pancreas acting as a storehouse must be regulated quantitatively, else hypoglycaemia would result. It seems clear then, that the definite amount of food coming down from the stomach excites a definite amount of secretin, which

excites the discharge of a definite amount of trypsinogen which sets free a definite amount of insulin for absorption into the blood, which amount is quantitatively sufficient to ensure the metabolism of the total glucose contained in the meal. This insulin may be called the pancreatic insulin.

The foregoing remarks seem to me to establish the existence of two separate insulin supplies, the cellular insulin, which is produced by the tissue cells and represents a little more than 50% of the total supply; and the pancreatic insulin which furnishes a little less than 50% of the total. Also that the pancreas, in its higher development, has acquired an added function, that of storing and releasing, in quantitative amounts, the extra insulin necessary for the total glucose of the diet.

There are many corroborating facts in favor of these conclusions. In Paris is a remarkable dog, the Hédon dog of which Joslin gives a full description, from which the pancreas was completely removed five years ago. This dog has been fed and kept in perfect condition by the administration of insulin and pancreatic extracts up to date. Now suppose we use this dog in conjunction with another perfectly healthy dog and reason from the known of this dog to the unknown of the normal dog. In both the cellular insulin or 55%, is being produced normally. In one the pancreatic insulin is being produced by the pancreas; in the other 30 units of exogenous insulin or 45% of total insulin is being supplied by injection. In both cases the metabolic requirements are perfectly satisfied. In the Hédon dog it has been found that a certain definite amount of insulin, neither more nor less, is required at definite intervals for the meals. We are justified therefore in concluding that definite amounts of insulin at fixed times are equally required by the normal dog, since all other factors are the same; and this presupposes a power on the part of the pancreas to store up this supply, and an ability to discharge it in quantitative amounts to satisfy completely the requirements of metabolism at meal time. And in no other way, up to the present time, can this be explained except by the stimulation of secretin in causing the discharge of trypsinogen and the release of quantitative amounts of insulin as noted previously.

The absorption of solutions of glucose from the rectum, however, absolutely proves the existence of an entirely separate and continuously produced cellular insulin supply. Observer after observer proves this. Arnheim in 1904 showed that glycosuria in diabetic patients was not increased after enemata of glucose solutions. Carpenter found after such rectal injections that a rise, considerably less than after a meal by mouth, of the respiratory quotient took place, showing that glucose was metabolising and that insulin must have been present in the blood. Luthje repeatedly witnessed the disappearance of acidosis during the treatment of patients by rectal enemata, showing that insulin was present and carbohydrate utilization took place. Bergnard also showed that in such case CO_2 increased and acidosis diminished. Jahnson-Blohm found in diabetic subjects that dextrose by the mouth produced sharp rises of the blood sugar, but rectal injections of the same amount did not cause any rise of the blood sugar. All of these experiments show that sugar entering the system by slow absorption (regulated by osmosis chiefly) finds plenty of cellular insulin to take care of it so that the blood sugar does not rise, and yet it metabolizes perfectly, raising the R.2, and by furnishing sufficient new carbohydrate for utilization restores Woodyatt's ratio of acidosis and relieves it, and in all this there has been no chance for the pancreatic insulin to be called upon.

Additional proof of the existence of cellular insulin is

furnished by the research experiments of Lusk and Macleod upon the D: N ratio. Lusk by the use of phloridzin obtains a result of 3.65 to 1, while Macleod using depa- ncreatized dogs obtains a result of 2.8 to 1. The reason for this difference, I claim, is to be found in the fact that phloridzin paralyzes or inhibits the action of both pancreatic and cellular insulin, whereas in depa- ncreatized dogs the cellular insulin still functions; and Lusk obtains more dextrose in the urine from unmetabolized glucose than Macleod does, and this difference shows the existence of cellular insulin.

The experiments of F. M. Allen upon depa- ncreatized dogs to whom myrtillin is given furnishes further proof. He removes all but 1-50 of the pancreas from the dogs, and feeds them upon bread and meat, giving myrtillin in sufficient doses. The result is that these dogs remain sugar free and gradually recover their full ability to digest glucose through a hypertrophy of the pancreatic remnant. This requires several months of time during which the cellular insulin, stimulated to increased amounts by the myrtillin, carries out all the demands of the sugar metabolism, keeping the dog sugar free, and thus showing not only that there is such a thing as cellular insulin, but that in times of need it may be increased by suitable agencies so as to supply completely the entire demand for insulin in the body. Perhaps in this direction lies the cure of diabetes.

Furthermore, another outstanding fact points to the control of pancreatic insulin by trypsin. Glucose, not being a proteid, when given by the mouth during an insulin reaction from hypoglycaemia does not excite trypsin and release more insulin, but passes immediately by absorption into the blood, raising the blood sugar and relieving the condition.

All of the preceding facts point to two distinct supplies of insulin in the body, one produced by the tissue cells and the other by the islands of Langerhans of the pancreas, so that in considering and treating diabetic cases in the future, it will be necessary for us to find out which source of supply is deficient. I have no doubt in my own mind that the terrible effect of infections in such cases will be found to depend upon the deficiency of the cellular insulin.

I cannot help being impressed by the similarity of function of the liver and pancreas as storage and regulatory organs, one for glycogen and the other for insulin, and there seems to be a perfect interlocking of the two systems.

Having demonstrated in the preceding section that insulin is derived from each individual tissue cell as well as from the cells of the islands of Langerhans in the pancreas, giving us both cellular and pancreatic insulin, let us begin with the A, B, C of carbohydrate metabolism and get a more correct idea of insulin itself. What is it? We have been calling it a hormone, a mysterious word which means next to nothing and doesn't help us to get anywhere. It is not a hormone but an enzyme; and like all enzymes has a substrate which is glucose; and furthermore, like all other enzymes it is specific in its action, which is to convert glucose into glycogen; to do this and nothing more so far as we can prove.¹ Pytaline acts only on starches; pepsin only on proteids; trypsin only on proteids; amylase only on starches; lipase on fats; glycogenase only on glycogen;

(1) Hormones stimulate particular functions of organs, usually by nerve influence. Enzymes do not do this but bring about special chemical reactions, acting upon definite substances. The specific duty of insulin seems to be to extract one molecule of water from its substrate glucose to form glycogen. Thyroxine, a hormone, increases metabolism as a whole and does not cause any special chemical reaction. Epinephrine, another hormone, stimulates numerous functions through the sympathetic nervous system, but produces no special chemical reactions. Also both hormones are produced by single glands and not otherwise. Insulin, therefore, should be considered an enzyme.

insulin only on glucose, and none of these do anything else. Insulin is not so mysterious when considered as an enzyme with a specific duty to perform. Insulin also is a catalytic enzyme; catalytic because it does not lose its identity while changing glucose to glycogen since it has been found in the urine by Best and many others; and if insulin is injected into a dog under ether, the whole amount may be recovered in the urine. We have than a catalytic enzyme which is produced by every tissue cell and by the islet cells of the pancreas.

Let us consider the cellular insulin.

Since the insulin is produced in the cell, the glucose must come to it by way of the blood current, and as the concentration of glucose is greater in the blood, the current of glucose, according to the principles of osmosis, would be from the blood to the cell, and there occurs the same action which takes place with all enzymes. Trypsin

changes proteids to amino-acids, i. e., Proteids $\xrightarrow{\text{Trypsin Enzyme}}$

Amino-acids; and insulin changes glucose to glycogen, i. e., Glucose $\xrightarrow{\text{Insulin Enzyme}}$ Glycogen. But there is a definite

rule about these changes under enzyme action in that an equilibrium must be reached. If there is a small amount of glycogen and free sugar in the cell, and much glucose in the blood, as much glucose as is needed to reach an equal tension will be admitted. If the glycogen store is full no glucose will be admitted; and within the cell the proper amount of glucose is converted to glycogen by the insulin of the cell. Thus the great vacuum for sugar existing in the cellular tissues is filled and equilibrium established. Meanwhile, the insulin, like all catalytic enzymes, remains unchanged, and after exerting its catalytic effect, passes out still unchanged, and is excreted in the urine. Thus cellular insulin is produced and thus it acts, and when we think of the millions of cells from which it comes we are not surprised when we find that the cellular insulin represents more than half the body's supply; nor must we overlook the fact that a deficiency of this insulin may be the cause of a diabetes, as well as a deficiency of the pancreatic insulin. New methods of treating, and perhaps of curing, mild cases may result from this new point of view, and it may be possible by carbohydrate stimulation of the tissue cells, through glucose enemata, to increase the production of cellular insulin and make up the deficiency. My experience in the use of Myrtillin in 25 mild cases, during the last year, leads me to think, on account of the increase of tolerance produced, that this agent may act by stimulating the tissue cells and the cellular insulin. Also it is noticeable while using myrtillin that any slight infection will immediately stop its favorable action. I believe this is because all infections affect the cells generally before they affect any of the larger organs, as the liver and pancreas, and that their first effect is consequently to diminish the cellular insulin. Perhaps the cells of the islands of Langerhans are all right after all in mild diabetes and the particular case of diabetes is entirely due to cellular deficiency. Who knows? At any rate let us look at it from this new point of view for a change, since at least it explains why a depancreatized dog still produces more than 50% of his usual supply of insulin, and it shows how insulin as a simple catalytic enzyme restocks the glycogen stores of all the tissues of the body, and does it in accordance with the established principles of physiology.

Let us consider the pancreatic insulin.

Why was it that between the time of Minkowski and that of Banting so many observers, in years of trying, failed to extract potent insulin from the pancreas, even though they knew it was there? The reason is, I think,

because tripsinogen held the insulin inactive, and although they probably often secured insulin in the extract, it was inert and thus escaped detection until Banting, by entirely discouraging the production of trypsinogen by tying all of the discharging ducts, obtained insulin in its active state. Further evidence on this point may be found in the experiments of A. H. Clarke made in 1915-16, in which he perfused the living pancreas with Locke's solution to which glucose had been added, and found that no glucose disappeared from the solution, proving that the insulin, though present, was held inactive by some influence. McLeod and many others verified this fact.

Now since these things are true, and matters of history, there isn't any doubt that trypsinogen holds insulin inactive inside the pancreas until something causes it to be discharged into the duodenum and sets the insulin free. What does this? Both Howell and McLeod state that the acid food from the stomach causes the production of secretin, which is the actual agent that causes the discharge of trypsinogen into the duodenum. So that insulin can only be liberated by the pancreas, when food (proteid?) is taken.

As stated in a previous section, the pancreas is a highly specialized organ, concentrating within itself an enormous number of pure insulin cells, so that it may quickly produce, and hold in storage, a large surplus supply of insulin, ready to meet the demand of the large carbohydrate intake at meal time. It stores and holds ever ready against the food intake an emergency supply of insulin, as the liver does of glycogen, supplementary to the basic supply of cellular insulin, which is produced slowly and continuously by the tissue cells, but which amounts in its total to more than 50% of the entire production. This is the way and this is the use to which the pancreatic insulin is put in the normal human body, in my opinion.

The Results of Treatment of Gonorrhoeal Joints

P. Hubmann records the results of the "functional treatment" of joint gonorrhoea, which consists in producing passive congestion of the affected joint, the administration of vaccines and protein shock, and above all, early passive movements of the joint. Active movements must also be encouraged as soon as possible. Under the congestive treatment pain is relieved so early that movements soon become possible, but in all cases the first time passive movements are attempted an injection of 2 per cent. novocain is made into the joint. In suppurating joints, if thick pus is obtained on aspiration, carbolic acid is injected. In addition to the treatment of the joints, the primary lesion is thoroughly treated. With such treatment, 78 per cent. of cases recovered complete or practically complete function at the joint with at the most a 10 to 15 degree limitation of movement. In 22 per cent, a partial or well-marked stiffness persisted. The best results were obtained in those cases in which the primary lesion had previously been treated.—(*Deutsche Medizinische Wochenschrift*, March 29, 1929, p. 532.)

Lady Osler's Will

Lady Osler, by her will, made the following bequests: £10,000 to McGill University, for the upkeep of the Osler Library; £5,000 to the Jefferson Medical College, Philadelphia, for the establishment of a Lectureship in Surgery in memory of Dr. Samuel W. Gross, her first husband; £2,000 to the Tudor and Stuart Club or Library of the Johns Hopkins University; £2,000 to the Radcliffe Infirmary, Oxford, for the Osler Pavilion; £600 to the Gross Library of the College of Physicians, Philadelphia; £200 each to the Acland Home, Oxford, and the District Nurses' Association, Oxford.

Lady Osler also left her house at Norham-gardens, Oxford, to the dean and chapter of Christ Church, to be assigned as an official residence for the regius professor of medicine in Oxford for the time being, or to be otherwise applied toward the endowment of that chair.—*The Canadian Medical Association Journal*.

A Self-Constructed Solenoid*

VICTOR COX PEDERSEN, A.M., M.D., F.A.C.S.

New York, N. Y.

A hobby is essential to the well being of every human being and those which partake of creative tendencies are probably the most satisfactory in the long run.

The activities of a hobby are advisedly exactly the opposite of those of vocation or profession. Thus the high class artisan is very apt to take up intellectual enter-

in Fig. I and assembled in Fig. II may arouse the reader's interest to make one himself. Hence the description of the method and drawings I used will be permissible.

The material is first class white pine free from knots. It works easily and is sufficiently strong.

The base of the stand and the top and bottom pieces of the wire-coil are 8 in. in diameter and 1 in. thick. The middle piece of the wire coil is 7 in. in diameter and 1 in. thick. Any good lathe mechanic can finish them in a few moments at small cost.

The post is peculiar to my solenoid and unites parts into one strong rigid unit without tendency to twist to one side.

The post is 2 in. in diameter between the base of the stand and the bottom of the wire-coil frame. It is 1½ in. where it seats into the base and passes through the top, middle and bottom pieces of the wire-coil frame. A medium size woodscrew driven into its contact with the base of the stand and the top of wire coil frame is sufficient to keep the device from falling apart as it is lifted about. Figure IV shows these details.

These parts of the solenoid are easy to design and have made, but the slats of the wire-coil-frame are contrariwise very difficult. The frame is 8 in. in diameter

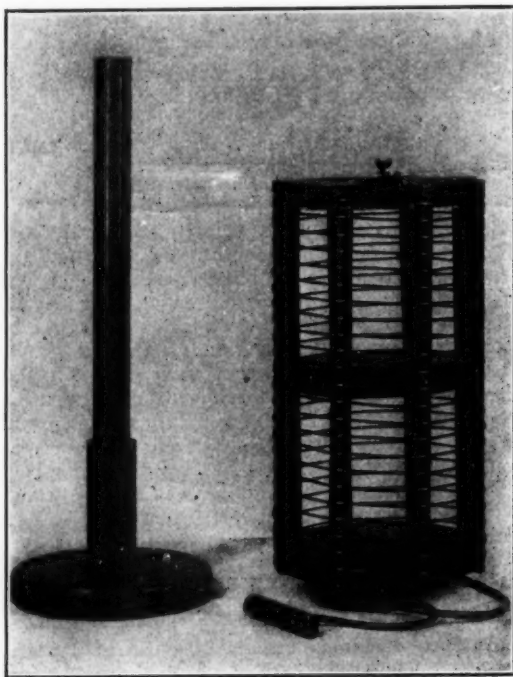


Fig. I—Solenoid knocked down. A base and post; B wire-coil with cable attached to lower binding post; C fiber plug with brass contact turned toward reader.

tainment—correspondence-school culture, music and the like. The intellectual and professional groups are attracted by out-of-doors life; if not available, then by indoor exercise or work. Thus we find many owning artists' studios, carpenter and machine shops or studying gymnastic sports and games. Often the most quiet relaxation as in fishing and camping undoes the stress and strain upon brain-workers.

During the summer my own hobbies are boating, fishing and swimming. During the winter there are two recreations, dancing in the evening on account of the music and companionship, and carpenter or machine work when leisure is not sufficient for the other relaxations.

It is amazing what skill may be acquired. I recently saw in a clergyman's library antique furniture which he had made so beautifully that it had deceived an expert into offers of purchase.

Personally I like to devise electrical equipment. Thus it was that the following solenoid was constructed with the aid of a woodworking establishment. The photographs of the base and post and wire coil separately

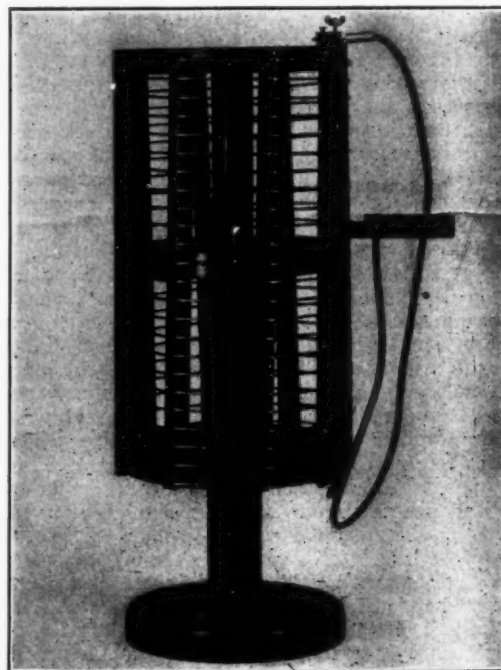


Fig. II—Solenoid assembled. The wire-coil has been mounted on the post, the cable attached to the upper binding-post and the fiber plug inserted about half-way down the wire-coil.

and, therefore, 25½ in. in circumference. There are 8 slats each a ½ in. wide, occupying 4 in. of the circumference and leaving 21½ in. of space between the slats. This equals 2-41/64 in. from face to face of the slats or 2-57/64 in. from centre to centre of the slats.

Instead of vexing myself with these measurements I

* Presented before the New York Electrotherapeutic Association, January 2, 1929.

took a piece of heavy cardboard, drew a circle 8 in. in diameter upon it and carefully marked the centre and 8 equidistant points on the circumference. These points will be 45 degrees apart. Each of these points is the midpoint of a slat so that nailing them into position became very easy. This cardboard is laid on the

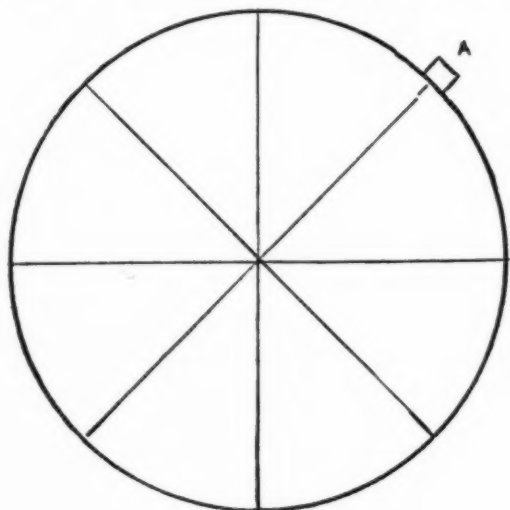


Fig. III

Diagram showing the eight centre-points for the slats carrying the wire of the wire-coil. The square at A indicates the position of one slat.

top and bottom pieces of the wire-coil and from it are marked the eight centre-points of the slats. Figure III shows this layout very clearly.

The mechanical drawing for the slats was not easy. The wire, starting at one slat, must ascend $\frac{1}{2}$ in. in one complete turn. As the wire is $\frac{1}{8}$ in. thick the distance between centres of the wire from coil to coil is $\frac{5}{8}$ in. The wire-coil frame is 15 in. high, hence there are 24 complete turns.

It is necessary to lay out on a board 15 in. wide and $25\frac{1}{8}$ in. long 50 slats each $\frac{1}{2}$ in. wide.

The lines for the grooves to carry the wire begin at the lower left corner and ascend $\frac{1}{2}$ in. at the right edge. As previously stated there are 24 of these grooves.

Each slat must be numbered from 1 to 50 to avoid confusion when only those which are available are selected.

The gaps between the slats in the assembled solenoid have already been spoken of. In my solenoid they have determined the use of only slats 1-5-9-13-17-21-25-29 of the original layout, because the circular-saw table was not set absolutely correctly, but after all sufficiently so.

As the circular-saw table must be adjusted 23 times to cut the 24 wire grooves and 49 times to saw the 50 slats a lesson in expense in the manufacture of such a device is given us.

I told the mill to hold these slats subject to order from friends who might elect to build a solenoid. As they might be lost in the mill for his convenience and to my annoyance, the millhand sent all material to me. The next set of slats will be No. 2-6-10-14-18-22-26-30 and the following set 3-7-11-15-19-23-27-31 and so on for the series of slats. Anyone desiring a set may write me.

Before the slats are cut off the board, the top and bottom of the board must be given a seating 1 in. long and $\frac{1}{2}$ in. deep where the nailing to the top and bottom

pieces is made, as shown in Figure IV. This makes another adjustment of the saw-table.

The nailing is now done for four slats at 90 degrees from each other. The middle piece is slipped into position and secured. The post is placed through the centre holes for alignment and stiffness and next the other four slats are nailed on. Light brads are sufficient and will not split the wood. The grooves for the wire must be carefully aligned, hence the slats must be nailed on in the order of their numbers, as stated.

A pair of double screw binding posts are placed at the centre line of one space between the slats.

Soft copper wire fitting easily into the grooves must be selected. There are 24 full turns each $25\frac{1}{8}$ in. long. The exact length of wire is 603 in. ($50\frac{1}{4}$ feet). Working waste requires 52 feet.

Uniform tension is essential. It is easily obtained by fastening one end of the wire into one binding post. Then after uncoiling the wire through a window or down a hallway attach a weight to it, and, rolling the wire-coil frame over and over, seat the wire uniformly and completely.

Soft copper wire should be selected of such diameter as will fit freely into the slats. I made the mistaken

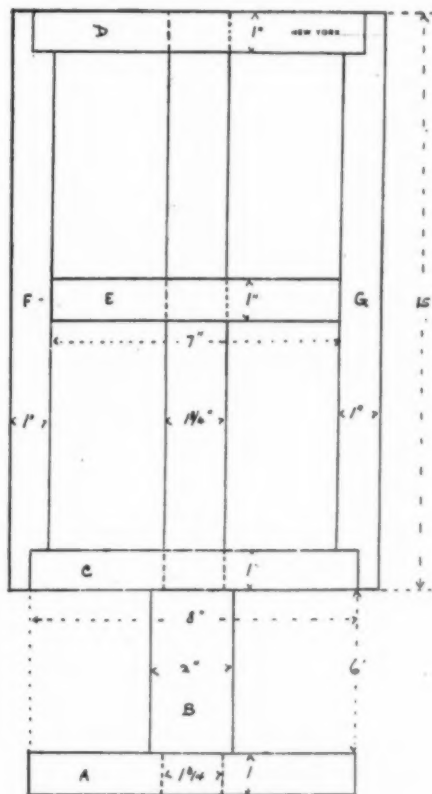


Fig. IV

Outline drawing for dimensions and assembly. A base; B post; C and D bottom and top pieces; E centre piece of wire-coil frame; F and G slats for wire. Grooves for the wire have been omitted but are arranged on the outside edge of each slat.

choice of wire which had to be crowded into the slats. This made the winding that much harder.

In figures I and II it will be noted that the slats are slightly oblique. While this condition is only unsightly it may be avoided by not making my error in winding. The proper way is to turn the wire-coil frame at the end opposite the wire. One's fingers should straddle

dle the wire and thus this twisting of the slats out of a right angle to the bottom and top pieces of the wire-coil will not occur.

The cable connector, shown in Figs. I and II, is a piece of solid fiber $\frac{3}{4}$ in. x 4 in. One end is cut away $\frac{1}{4}$ in. x $1\frac{1}{2}$ in. and faced with brass strip sunk $\frac{3}{4}$ in. into the rest of the fiber and screwed fast at two points of its exposed surface. The opposite side of this part of the handle is bevelled down to $\frac{3}{8}$ in. for insertion between any two wires on the wire-coil. The cable is received into a hole bored through the fiber to the buried part of the brass strip, which in its turn is drilled for the stranded wire-core. A thin flat-head screw is seated into this core so as to spread the wires for a good contact with the brass strip. The sealing-wax is melted and poured into the hole for protection of the operator's hand.

The solenoid is a step-up in the circuit of the high frequency machine. It is connected in series to either

binding post of the machine between the patient and the machine. By varying the number of coils included in the contact made by the plug a point is reached at which the meter-reading is constant, especially when large milliamperage is used, as for some types of autocondensation and diathermy of the liver, as examples.

The solenoid also is invaluable in so stabilizing the current that the generator will run cool during long and massive treatment.

While treating one of my patients with 2000 milliamperes on the autocondensation couch the motor ran hot and smoked so that the fumes caused coughing. Upon putting the solenoid into circuit all trouble ceased and the treatment continued satisfactorily.

This solenoid may be constructed in few hours of leisure. As it develops until completed the pleasure and satisfaction grow.

45 West 9th Street.

Feminine Hygiene—Its Whys and Wherefores*

WINFIELD SCOTT PUGH, M.D.

New York

What is this feminine hygiene? This little question has been asked of us hundreds, aye, thousands of times. Why does my daughter find it necessary to resort to this so-called sanitary procedure? Are these modern ideas practiced by respectable women? The latter group of queries are hurled at us about as frequently as the first question.

We shall endeavor to make our little narrative short, sharp and to the point; beginning by answering the first interrogation. Feminine hygiene is little more or less than the application of cleanliness to those parts peculiar to women. If I should ask you, shall I wash my hands and face this morning, you would laugh at me and rightly so. While making a transcontinental trip some time ago on a good train, a passenger addressed me as follows: This service costs you ten dollars extra, but the only advantage I can see is, one can take a daily bath, but who wants to do that? The same is applicable to the present topic. Many of us can still remember the good old days, not preprohibition, but those when the dear old wooden tub was brought in on Saturday night for the weekly bath. Don't be too harsh with criticism, my gentle modern reader, as this was practiced by the best of families.

Are we more healthy to-day, from the practice of daily ablutions? I think that few will gainsay this. Folks with not too keen power of observation look askance at the so-called flapper, little seeming to realize what a charming and healthy creature she is.

The practice of feminine hygiene is not new, it having been resorted to by intelligent women, in some way or another, for centuries. Among a large group, however, strenuous objections have been offered; in some it almost amounts to a religious prejudice, if not that. Many of these old antagonisms stick like a leech, but are mere relics of puritanical hypocrisy. If the Plymouth Rock had only landed on the pilgrims instead of the pilgrims having landed on the Rock, we would probably not now be annoyed by these somewhat antique notions.

Fortunately at the present day young women refuse

to accept a dogma just because their forebears did so for centuries. The modern lady attends lectures, she reads good stuff, and has made up her mind she is not longer going to suffer as the result of some one else's folly. Stick to your guns, my dear ladies, as your ideas are proving most helpful.

The Necessity of Feminine Hygiene

When women were created, it cannot be said that nature was good to them. Politically speaking they may possess equal rights with men, but anatomically no. Just stop and think, and you will recall that in women three canals are found, all discharging body waste or detritus, and opening in close proximity to one another. The uppermost of these apertures, the urethra, is frequently flooded by the urine. The lower or orifice of the intestine is so arranged that it empties itself quite thoroughly. Between these two we have the opening of the vagina or birth canal. The last also eliminates waste products, particularly noticeable during menstruation.

What is the significance of this brief anatomical description? It must be apparent that the vagina is frequently soiled by the urine, or by matter from the bowel. These conditions are far more common than one realizes. In the intestinal canal the colon bacillus has a normal dwelling place, and not only is it not dangerous, but is very valuable. When, however, it enters other parts of the body, it is harmful indeed. Infections of the female parts from the bowel are therefore common and dangerous. Any condition from a simple vaginal inflammation to an abscess of the ovary and tube may result. In little girls we are constantly seeing vaginal infections because their parents never taught them how to cleanse themselves after a bowel movement. We regret to say that this condition is not rare in some very large children. By all means teach your girls to cleanse away from the vagina, not toward it, and they will bless you in the years to come.

Kidney infection of young girls is common and to many it seems a mystery. In boys it is rare. There is nothing obscure in this; it is simply a colon bacillus infection from the rectum. Take a sharp look and you

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will be rewarded by finding pieces of bowel material around the vulva and even in the urethra. When the urine contains the colon bacillus, or other irritants, a marked infection of the vagina may occur. When you go to your family physician suspecting that you have a urinary condition, he will tell you he must have a catheter specimen taken direct from the bladder. Why? Because otherwise there may be contamination from the other orifices.

How may these infections be prevented? In childhood by ordinary but well applied cleanliness after use of the toilet. In the adult feminine hygiene will prevent most of the trouble.

Vaginal Discharges

We are constantly asked by women, is a discharge from the birth canal normal? Certainly it is not. It must also be added that all flows are not gonorrheal, as many think. When a discharge appears, however, one should go to a physician at once and ascertain its cause. Perhaps it is due to a lack of cleanliness such as results from a prejudice against the douche, or to rectal infection as above noted.

Very frequently a lady will come into my office with the statement that a discharge is burning her. An examination only too often reveals the germ of gonorrhea. In another group we find a crusty condition, so marked that one almost has to dig out the debris. The whole generative canal is full of vile matter that quickly responds to vaginal irrigation. Yet the thought of a douche is most repugnant to these ladies.

Married women who have borne children frequently suffer from a heavy discharge as the result of an old tear in the neck of the womb or the vaginal floor. This area in the womb is a common site for cancer and as that disease always results from prolonged irritation do not neglect it. The vagina is so constructed that it tends to retain much material that should be gotten rid of, and this can only be accomplished by complete irrigation.

Frequency of Gonorrheal Infection

Ladies, do you realize it has been claimed that eight hundred out of every thousand men have or have had a gonorrheal infection? You will say this may include some of my best friends. I am sure it does. When we realize that many of these are uncured and expect to enter the holy state of matrimony, or to be associated with women in a less conventional manner, think what it means to the female. It has been said that certain persons may be trusted with a life or money. Aye, that is true, but sex is another matter. No, I am not a cynic, but must look matters squarely in the face as they have been presented to me thousands of times over a period of about thirty years. Do not forget to treat your best friend as you would a total stranger where sex is involved. This will save you many a heartache. Just think of it, eighty-five per cent of abdominal operations in women are due to a preventable disease. In over a thousand consecutive operations we note the above figures, and in all the history is reliable and clear. In a large foreign clinic we note sixty-five per cent, but a far greater proportion appear in our own dear old United States.

Infection of the birth canal is the greatest cause of so-called race suicide, a failure to produce offspring. Not only gonorrheal infection, but any disease may do it. One well known observer states that fifty per cent of women infected with gonorrhea are barren. In another series of eighty-one cases of gonorrhea, forty-nine per cent were sterile, etc. The development of sterility

in the female is the same as in the male, by which we mean it is purely mechanical, a blocking of the tubes between the ovaries and the womb.

Extrauterine Pregnancy

As a result of an inflammation of the fallopian tubes a very serious condition known as extrauterine pregnancy frequently occurs. Normally, the child is carried in the womb. In this instance, however, the impregnated female cell, or egg, becomes arrested in the tube on its way to the womb. In this position it begins to develop. Here we have a condition which cannot go on very long, as the channel is small and the organ very delicate. If not discovered in time, the mass ruptures the tube and the mother often dies of fatal hemorrhage as a consequence.

Think It Over

In this brief dissertation we have discussed only the more dangerous infections, but there are others, and if we may be pardoned that hackneyed expression, too numerous to mention. Even should we eliminate all these dangers, it is still of the utmost importance that accumulated mucus and other normal substances be removed as regularly as we take care of them in other places. Even these products when allowed to collect and decompose readily invite infection.

Hygienic Methods

It is a common practice for women to irrigate themselves sitting on the toilet. Of course this is speedy and often effectual. It is our custom to suggest that the lady lie on her back on a bed-pan or in the bath-tub. The common douche nozzle has many objections—chiefly as follows: All parts of it cannot be boiled and it does not reach the necessary places. No dilatation of the walls of the vagina is produced and the fluid does not reach the more hidden areas of decomposition. Another little point occurs to us here, namely, what of the substance used as a douche. There is unfortunately a tendency on the part of most women to use strong solutions. This is but natural, as most persons feel they must cleanse as thoroughly as possible. In vaginal douching, unfortunately, this is an error and such substances as bichloride of mercury and carbolic acid should never be used unless prescribed by a physician. The mucous membrane of this canal is extremely delicate and its cells easily irritated or destroyed. We are constantly seeing ladies who suffer from a discharge as the result of using such chemicals. These conditions are often more difficult to clear up than an actual infection.

In summarizing, we believe that the feminine hygiene is best taken care of by a douche tube capable of producing dilatation of the vaginal walls and the use of non-irritating antiseptics.

30 East 40th Street.

Torsion of the Spermatic Cord

The onset of torsion of the cord is always sudden. Severe pain is a constant accompaniment and may be localized in the affected side of the scrotum, or referred to the abdomen and accompanied by temporary obstruction to the passage of motions and flatus, and even by prostration. In simple torsion the temperature is rarely above 100 degrees Fahrenheit. The scrotum swells rapidly and is so extremely tender that it is impossible to differentiate the epididymis from the testis. The swelling is at first confined to the testicle, but later the scrotal tissues become edematous and the skin somewhat discolored. This discoloration of the skin may extend well past the midline. Indications of fluid within the tunica vaginalis may be found. The opposite testicle may give evidence of abnormal motility. In one case rhythmical contraction and relaxation of the cremasteric was noted thirty hours after the onset of the condition. The rate was thirty per minute, and it continued throughout the entire examination. This was not noted at other examinations.—Roantree, Calif.-W. Med., May, 1929.

Abdominal Manifestations of Food Allergy

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Each and every patient must be individually studied by the technical methods of:

1st. *Gastric analysis.* The acid content of the gastric juice varies considerably. Some authors find much achylia, but Andresen found this condition in but twenty per cent of his cases.

2nd. *Roentgenological study* of the gastrointestinal tract including biliary drainage may, in the absence of any organic findings, show the presence of unexplainable spasms at the cardiac end of the stomach, at the pylorus, at the cecum, in the transverse colon, in the sigmoid and at the rectum. Disturbances of motility, usually hypermotility, are also noted.

3rd. *Sigmoidoscopy* should next be carefully performed and

4th. *A microscopic examination* of the mucus or fecal contents present.

Nearly 50 per cent of the patients having food allergy, as observed by Duke, had demonstrable pathological lesions in the alimentary tract or its appendages. These lesions were recurrent appendicitis, gall stones, duodenal ulcer, dense adhesions and extreme ptosis. Food allergy, like other forms of allergy, is perhaps primarily dependent on an inherited constitution which renders the individual susceptible of becoming hypersensitive to certain alien substances. It seems quite possible, however, that an abnormality in the alimentary tract may be a contributory factor in the etiology of this type of case.

In two of Duke's cases attacks of acute appendicitis, which required surgical intervention, followed attacks of food allergy. Alimentary allergy may cause violent muscular contractions, pathologic secretions, edema of the mucous membrane and local anemia, and it seems possible that these may occasionally set up infection and inflammation and contribute to disease in the alimentary tract or in its appendages.

By a careful analysis of the patient's history, the interpretation of the skin tests and the use of elimination diets, many of the manifestations of food allergy will be relieved. Abdominal pain and other gastro-intestinal symptoms invariably coming on after eating certain articles of food, in an individual who is at other times free of digestive disturbances, makes the diagnosis itself. Severe abdominal pain is a symptom which is never taken lightly by a careful physician. It often indicates serious illness or an emergency surgical operation. However, abdominal pain which may simulate in some respects the pain of a serious abdominal disease is occasionally the result of hypersensitiveness to food.

It is well known that hypersensitiveness to foods may give rise to dyspepsia, gastrointestinal upsets associated with vomiting, diarrhea, griping pains in the abdomen and mucous colitis. Occasionally the abdominal pain occurs alone as the sole symptom of the hypersensitiveness to a food, and may thus be easily erroneously diagnosed.

The phenomenon of hypersensitiveness of the bronchi, naso-pharynx and skin giving rise to asthma, hay fever and urticaria has long been known, but that the gastrointestinal mucosa may also react in an allergic manner causing chronic digestive disorders has not been so generally recognized nor so intensively studied. The gastrointestinal manifestations of allergy are various, and are said to be caused in two ways: first, by direct irritation of the gastrointestinal tract from the presence of the

offending protein within its lumen, and second, as a part of the general allergic reaction due to absorbed protein. In most cases both factors probably play a part. Direct irritation would be the cause of the vomiting or diarrhea, or both, following sooner or later after ingestion of the protein, and of other irritative symptoms, ranging from an unpleasant uneasiness or "gassy" sensation all the way to the severe spasms, resembling biliary or renal colic or intestinal obstruction. As a part of a general allergic reaction, and associated with similar manifestations of the skin and bronchopulmonary tract, would be classed such conditions as purpura, urticaria and angioneurotic edema, which have been repeatedly shown to occur in the mucosa of the gastrointestinal tract. It is highly probable that many of the symptoms formerly attributed to intestinal toxemia, and rapidly relieved by a meat free diet, have really been due to sensitization to some meat protein, especially as observation was frequently made that such symptoms as headache, nerve pains, coughs and skin eruptions would occur too soon after eating meat to be accounted for by the elaborate process of decomposition and final tissue absorption.

The diagnosis of food allergy is often difficult. Gastrointestinal manifestations may resemble so closely those of practically any of the organic lesions of the gastrointestinal tract, that the first requisite is a complete gastro-intestinal study, including all laboratory and roentgenological examinations, to rule out such organic lesions.

The history is an all important factor in the diagnosis of alimentary allergy since a positive history of allergy in the family is obtained in upward of 75 per cent of these patients. In like manner the occurrence of any of these allergic manifestations in the patient's past or present history should make one consider allergy as a cause of gastrointestinal disturbances or abdominal pain. A careful inquiry into food dislikes or food disagreements in adult life as well as in childhood is most important because of the help such information frequently gives regarding foods to which the patient is actually sensitive. Thus the personal history of the patient becomes an important link in the establishment of the possibility of a food allergy.

As a routine in recording every patient's history the presence of a possible allergy in the family or personal history should be very carefully determined. Allergy is involved in human symptomatology so frequently that it has to be considered in the diagnosis of every patient. It is estimated that 15 per cent of all people have some allergic symptoms.

The symptoms of protein sensitization of the digestive tract are due to reactions in this tract comparable to those in other tissues, and are in the main of two types, mucosal and neuromuscular. The mucosal reactions may be so mild as to cause but a vague uneasiness or feeling of fullness, often attributed to gas and accompanied by aerophagia, or through varying degrees of severity to actual obstructive symptoms where the swelling has occluded the intestinal lumen. Cases of the latter type are occasionally subjected to operation, the surgeon either discovering no signs of obstruction or observing a general edema of the bowel, disappearing rapidly during manipulation.

Bogart reports one of these obstructive cases. He says, "The stomach was washed out, the patient ether-

ized and a right rectus incision made about four inches long. Upon opening the abdomen it was found to contain a considerable quantity of blood-stained fluid, such as is commonly found in cases of ileus. Inspection of the appendix showed it to be normal, but it was removed. The lower ileum was somewhat distended and congested with a few ecchymotic spots. The intestine was followed upward from the ileocecal valve (the distended portion was not more than a few feet in length), after which the intestine was apparently normal in appearance until we came to the jejunum, which was found to be very much swollen and edematous. This swelling and edema extended up to the point where the intestine passes beneath the mesentery, and was so pronounced as to produce a stiffening of the intestine sufficient to prevent peristalsis. When grasped between the forefinger and thumb the intestine was apparently at least one inch in thickness. Evidently the lumen of the bowel was almost, if not completely, obliterated by this swelling and edema. No further evidence of obliteration having been found, the wound was closed."

The mucosa of the mouth and pharynx shows reactions in the form of canker sores or of angioneurotic edema, the latter a serious condition, especially if associated with edema of the larynx. The anal and rectal mucosa may exhibit the typical reactions, the condition often resembling a severe proctitis, and in fact, due to the infective material in the lower bowel, often resulting in actual ulcerative proctitis, sigmoiditis and colitis.

The neuromuscular systems, due to spasm, are often confusing, and it is in cases of this type that many futile operations are performed as a result of insufficient study. Spasms of the stomach and bowel, especially marked at the areas of more marked irritability, such as the pylorus, ileocecal region, transverse colon, pelvic colon and rectal sphincter, may cause symptoms varying from a sensation of peristaltic unrest to severe colicky pains, which with tenderness, due to the mucosal reaction, may closely resemble biliary, appendicular, renal or intestinal colic. Pain over the liver region, due to sensitization to definite foods, and which is so suggestive of biliary tract disease, is according to Rowe the result of local edema of sensitized liver cells. Such cases have been subjected to operations, the colicky attacks of course persisting after the operation. Milder spasms may merely induce reverse peristaltic waves, and cause such symptoms as epigastric fullness, heartburn, sour regurgitation or vomiting. Increased peristalsis, manifesting itself in diarrhea, acute or chronic, the latter often followed by rectal complications such as hemorrhoids, is one of the common allergic reactions.

Angioneurotic edema is the outstanding symptom of food allergy. Upon the skin it manifests itself in generalized or definitely localized, transient or intermittent, painless, non-itching swellings. The proctologist may be consulted because of these changes in the anal or perianal integument and discover similar swellings of the face, eyelids, or legs.

Itching of the skin and eczema due to food allergy is emphasized by O'Keefe, Shannon and Schloss. I have had several cases of pruritis ani and perinei due to one or more food toxins, and two that were associated with sensitization to animal emanations and dusts. The possibility of skin reactions to other antigens must always be kept in mind even though we are searching for the rôle of suspected foods. Because of the chronic nature of pruritic and eczematous lesions finding the offending food is often slower than in other allergic conditions.

Schloss showed the absence of skin reactions to egg throughout the month except on a few days be-

fore the attacks of urticaria and demonstrates the varying activity of the skin and explains the difficulty experienced in obtaining skin reactions. Stuart and Farnham reported negative skin reactions to egg with both the cutaneous and the intradermal tests in a child with marked cutaneous edema and vomiting due to eggs.

Mental confusion, restlessness, irritability, dizziness and drowsiness in the presence of intestinal intoxication and food allergy must be considered in relation to migraine. Kennedy has suggested that angioneurotic edema probably occurs in the brain or even in the spinal cord, giving rise to severe migraine, transient hemiplegia, transient amblyopia, aphasia and paraesthesia, as well as to vertigo and psychoneurotic tendencies. Such cerebral edemas have led to injections in the fifth nerve for supposed neuralgias, or to compressions in certain cases as reported by Bassoe. Hartsock considers most of these symptoms due to duodenal stasis and intestinal toxemia. His therapy includes exclusion of bread, wheat, cereals, potatoes, egg, and milk as recommended by Brown, which happens to eliminate the most common foods to which sensitization exists.

Fever is a common result of food allergy in the gastrointestinal and asthmatic attacks, probably because of the entrance of food proteins into the blood stream or due to the allergic reaction in the sensitized tissues. Thus food allergy as a cause of fever in allergic individuals and as the basis of unexplained temperatures throughout life must be kept in mind.

Although all of the above mentioned symptoms may also be caused by organic conditions, a suspicion that they may be due to allergy should be aroused if they show certain characteristics, as for example, first, if the symptoms occur at irregular intervals, not explainable on any other basis, and possibly with a history of variation from the usual dietetic habits, just preceding the attacks, or coincident occurrence of other allergic manifestations, as, for instance, where urticaria, vomiting and diarrhea may follow the eating of a fish dinner. Second, if the symptoms occur on certain days of the week, especially in persons of methodical habits of eating, or in individuals living in institutions where the same foods are served on the same day each week, sensitization to one of these foods may be suspected. An example of this is seen in patients who have a headache and vomiting attacks or diarrhea every Monday morning attributed to underexercise and overeating on Sunday, but really due to some article of food not eaten on week days. Third, sensitization is proved in cases in which the patient discovered for himself that certain foods in large quantities may cause marked symptoms, and so has contented himself with small amounts of these foods each day, as, for instance, in cases where the individual knows that a glass of milk will invariably act as a cathartic but does not suspect that the milk used in his beverage, cereals and puddings is causing his heartburn and abdominal cramps.

Examination of a patient with allergy does not show anything characteristic except in cases where some of the skin or mucosal manifestations mentioned above are visible.

Many of the patients are underweight, asthenic, and in some cases emaciated to a point suggesting malignancy although some are well nourished.

Various organic lesions may be found, but as said before these do not exclude the coexistence of allergy. The blood count, especially during the attacks, may show a marked eosinophilia, and eosinophile polymorphonuclear leucocytes have been seen in large numbers in the mucus obtained from the bowel of diarrheal cases.

30 N. Michigan Blvd.

Polycythemia A Liver Endocrine Toxicosis

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Sometimes we don't pay enough attention to the rare case; the patient that is hard to diagnose, the difficult case that medical men would like to escape.

Polycythemia we seldom see, and what can we do if we find a case? Not all cases are splenic, and amenable to surgical treatment. Often any involvement of the spleen is secondary. The spleen may be normal in size, or medium, or large, or very greatly enlarged, according to the case. It has been observed that enlargement sometimes occurs after the disease is rather far advanced, indicating the secondary nature of splenic complication in some cases at least.

Of course high altitude may be disregarded as only an incident. It is compensatory. Increased and deep breathing stimulates the hematopoietic system. It is physiological, not pathological. Some other conditions are purely physiological, as the highly sthenic state, or toxic, as the effect of coal tar derivatives, poisons and other such causes.

The medical literature and wide professional experience, including personal observation in rather large work, would indicate that we are groping in the dark as to the cause of polycythemia. Vaques, Osler, and others seem not to have much to suggest as to the diagnosis or treatment. Here and there a thought is expressed rather doubtfully in regard to an acceptable treatment that might help some; for instance benzol or phenylhydrazin. But as to the cause of this important disease, the profession seems to know nothing with certainty. The kidneys have been suspected, but nephritic symptoms are certainly secondary. The heart has been accused. No organ in the body has to bear more burdens coming from other organs and of course it complains. The brain and its membranes have been suggested. But who has not seen a case with perfectly normal pupils and wholly without indications of brain disease? Sometimes it happens that there are fleeting marginal shadows and fading vision, probably due to fluctuating retinal circulation. Brain tumor patients show no polycythemia. In most cases of this abnormal blood state, there is no disturbance of vision. May not the occasional case with symptoms of paresis or other form of paralysis be accounted for by a great underlying toxic state from endocrine dysfunction of the liver? And may not the occasional case with symptoms of pulmonary arteriosclerosis be laid to toxemia?

The patient is nervous, wakeful, has a feeling of fullness about the head, giddiness; suffers headache at times. The gastro-intestinal tract is unsatisfactory; much gas, important indigestion, at times constipation; but very likely diarrhea that is very troublesome. The blood pressure is up a little, the pulse somewhat fast, the heart annoying with its irregularity and thumping. The complexion is florid to the extreme; but at times, especially in the recumbent position, the lips are blue, and the surface cyanotic and possibly one or two fingers dusky. The patient is greatly distressed with nervousness, gastro-intestinal symptoms, possibly uneasiness about the liver and a peculiar weak feeling about the legs, causing a reeling uncertain gait which seems due to toxicosis of the cord, rather than connected with the headache, dizziness and other cerebral symptoms. There may be occasional half fainting spells with a tendency to become unconscious.

The red count may reach twelve or fifteen million; the

whites may be up; singularly the platelets are normal. The specific gravity is high, the viscosity low, the hemoglobin 110 to 130 or higher. The general health is impaired, the chief complaint being the bowels, the head, the legs, the nerves with a disposition to syncope. How shall we explain the syndrome? One opinion is as good as another probably. But it may be well to suggest a possible cause; to take a chance and venture a little, as is the right of all thinking medical men, and express an opinion.

A typical case under close observation for some months has led to the following conclusions and it is hoped that others may compare opinions.

There is scarcely a doubt that the body is an assembly of differently arranged electrons, an electro-chemical mechanism, driven and directed by the endocrines, or at least intimately related. The observing clinician strongly suspects this to be true. Crile believes that the liver is a great central battery. Who can estimate its importance in carbohydrate digestion, in smashing the proteins into fragments to be assimilated; in pouring out great quantities of bile to serve as an intestinal disinfectant and aid to digestion and other functions? But how many have given any thought whatever to the liver as an endocrine gland with manifold powers? Those internists who have seriously studied the endocrines, suspect it of being really the master endocrine gland. From careful study of its anatomy and physiology, we must conclude that it is an organ of vast importance. We know certainly that it influences the blood making organs powerfully in working over and utilizing the hematin; and clinically those of large experience know that to control liver action will relieve toxemia and build up the blood in a remarkable way.

If the liver profoundly influences the hematopoietic system, why shouldn't disorders of the endocrine part of its function have a disastrous effect upon the blood, just as disturbed function of the thyroid leads to thyrotoxicosis, with an extreme upset of all normal action of the heart, the functions and the nervous system? Let us call it hepatic dyscrinism or hepatic hyperendocrinism. It seems most reasonable. Is there any better explanation? What can be done to control the condition?

Every endocrine gland probably has normally its secretion to stimulate and to control. If we did but know the agent of control we could command the situation. Not having that knowledge, why not try out Lugol's solution, since iodine is such a wonderful balancing agent in all function, just as we use it in thyroid disturbance?

Upon the principle of the interlocking of the endocrines there might be some promise in the powerful control of the pituitary over all the functions of internal secretion, especially the Beta of Kamn's "pituitary twins" recently announced. A case was seen who was drinking forty to fifty glasses of water a day, with normal specific gravity, passing this extra water through the skin, being dehydrated, having lost forty-five pounds in five months. He was given whole gland pituitary tablets and after three weeks reported water drinking reduced to fifteen or twenty glasses a day, a gain of five pounds in weight, and feeling fine. The kidneys and the skin are closely related in their work, and often measures that influence them also affect the liver. If this newly discovered secretion of the pituitary has such

a powerful control of the water balance of the body, over the skin and kidneys, it would seem that it might offer something in the control of the endocrine function of the liver. The work at the bed side, by thoughtful study, by trial and elimination of error is just as important as the laboratory and experimental research in the field of vivisection.

Possibly bile salts might help. Certainly iron and proteins should be eliminated from the diet. It has been observed especially that liver feeding increases the symp-

toms in polycythemia. No doubt the important internal secretion of the liver will soon be discovered and will be found a powerful factor in the stimulation and in the control of the blood making organs.

Addenda: A patient under care was given ten drops of Lugol's solution three times a day for a month with a reduction of the red cells from eleven million to about seven and a half millions, but without relief of the very distressing head symptoms. At this time whole gland pituitary tablets were added to the treatment, the Lugol's solution being continued in the same way. At the end of the second month the reds had been reduced to 5,150,000 and all brain symptoms had disappeared with great relief.

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Two Methods of Treatment of Enuresis Nocturna in Institutions for Children

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Enuresis nocturna constitutes a serious and difficult problem in institutions for children. Regardless of numerous theories concerning the causation of enuresis and despite the large variety of therapeutic measures that have been advocated, enuresis nocturna continues to distress the administrators of orphan asylums, reformatories and other institutions where children are gathered in large numbers.

At the Hebrew Orphan Asylum in New York City I found between 100 and 150 children at various times suffering from enuresis nocturna in various degrees. To make a personal approach to the problem of each child seemed impossible. The questions arose as to what effect could be secured through making a group approach to the problem and, secondly, to what extent the tremendous amount of enuresis could be overcome by one definite continuous effort at re-education through re-conditioning nocturnal habits of sleep.

During the course of four years two plans were employed. The first involved self-direction with hetero-suggestion, strengthened by social compulsion and group inter-stimulation. The second procedure was based upon re-conditioning night sleeping habits by means of awakening the enuretics at regular intervals during the night. It may be significant that the general percentage of cures was quite similar with the two methods.

The first method involved first, a meeting with the entire group of boys and girls separately and explaining the purpose of the campaign to overcome bed-wetting. The acceptance of the goal by the group is essential.

The second step was to have the boys and girls divided into teams of various numbers depending upon their grouping in the dormitories. Each team elected its own captain. So far as possible there were two teams in each of the age groups into which the children were normally divided.

The third step was to meet the entire group each Sunday morning when the respective captains reported the number of boys or girls in their groups, and the total number of dry nights that had been attained by their teams, during the week. In preparation for this report the leader of each team had made a daily record of each night's performance of each member of his team. He was allowed to use such measures as the team decided upon for the purpose of raising the week's score. Some woke their team-mates, others encouraged the weaker members to greater effort, etc.

The fourth step involved the calculation of percentages of dryness for each team at each weekly conference with the contrast of such percentages with the results of the week previous. The winning team was given praise for its effort and other teams were asked if they could not improve their records. Each group took some pride in its accomplishment and there was definite effort at competition to secure effective results. The boy or girl having the greater number of dry nights was singled out for special commendation and the team was asked to work as a group during the ensuing week toward meeting the best individual accomplishment.

The fifth step was taken when a boy or girl had been successful in keeping dry for four weeks, upon which record he was dismissed from the enuretic team and admitted to the regular dormitory.

In large institutions where new children are always being admitted the teams vary somewhat in number and in the severity of the enuresis among those who get into the special dormitory groups on the basis of age, size or school placement. Nevertheless, interesting results were obtained as will be enumerated later.

The second year the procedure was somewhat similar in that the teams were created and fostered by the boys and girls alone without meeting the psychopediatrician or other adult save for the handing in of the weekly reports by the leaders. It is worth mentioning that the leaders' reports were quietly checked up by councillors to make certain of their validity and veracity under stress of competition. The results of the second year were equally satisfactory.

The second plan provided that all male enuretics be awakened at 9 P.M., 12 P.M., 2 A.M. and 5 A.M. They were not merely awakened but were obliged to go to the toilet. With this procedure again a month of dryness was regarded as representing a cure, even though one recognizes that there are some occasions when relapses may occur.

I present some figures to show the results of these two simple modes of attack, on a group plan and on an individual plan. There were some variations in results during the winter and spring seasons, depending somewhat upon the coldness of the nights, the warmth of the room and the like.

As an illustration of one month's progress I am offering the following record of a group of 61-62 boys and their team record for the week ending December 20th and the week ending January 17.

	Number on Teams		Total Dry Nights		Average No. of Dry Nights		Number Boys and Age	Number and Per cent Cured	Number and Per cent Improved	Number and Per cent Unimproved
	Dec. 20	Jan. 17	Dec. 20	Jan. 17	Dec. 20	Jan. 17				
M 3	{ 8 7	7	16 17	37 18	2 2-3/7	5-2/7 2-4/7	31 Under 9 yrs.. 34 9-12 yrs. 13 over 12 yrs...	9 (29%) 12 (35%) 7 (54%)	13 (42%) 12 (36%) 6 (46%)	9 (29%) 10 (29%) 0
M 4	{ 6 6	6	16 19	24 29	2-2/3 3-1/6	4 4-5/6				
M 5	{ 6 6	6	35 33	42 42	5-5/6 5-1/2	7 7				
M 6	{ 8 7 7	8 8 8	26 29 19	27 24 23	3-2/8 4-1/7 2-5/7	3-3/8 3 2-7/8				
Totals	61	62	210	266	3.44	4.29				

It will be noted that during these two weeks, a month apart, the average number of dry nights for the entire group had increased by 56 or the equivalent of 8 boys dry for an entire week. The average number of dry nights changed from 3.44 to 4.29. It is noteworthy that one group of 12 boys had actually become dry within this period of time.

That similar results are obtained among girls may be illustrated from a report of 38 girls from the period of November, 1926, to May 15th, 1927. Under team organization 11 girls were reported completely cured and 11 had been reduced to enuresis only once a week, and there were only 16 with slight improvement. Thus there were 29 per cent cured, 29 per cent improved almost to the point of cure and 42 per cent with only slight improvement. This result was further corroborated by the experience between the first week of October, 1927 and January 1st, 1928, when once again 12 out of 39 girls were discharged as cured. It is significant that of 10 girl enuretics who were not in one of these enuresis classes only 2 were discharged as cured. This is a hint of the value of the class approach, although, of course, the figures are too small to be perfectly definite.

A further testing of the class method of approach is shown by the results of the experience with boys during 1928. I have divided the test into two periods and offer the results as follows:

From September 12th to January 23rd out of 83 boys 24 (28.9%) were cured; 22 (26.5%) were improved; 31 (37.3%) were unimproved and 6 (7.2%) had been discharged from the institution.

From February 6th to May 6th out of 58 boys 20 (34.4%) were cured, 20 (34.4%) were improved and 18 (31.1%) were unimproved. One notes here the advantage of approaching the enuretic problem during the warm season. During the autumn-winter four months 55.1% were improved or cured. During the winter-spring 3 months 68.8% were improved or cured.

It is suggestive that during this period of team group approach the greatest improvement was found among boys between the ages of 8-12 years. Fifty per cent of the boys under 8 years showed no improvement during the February-May period; 29% of the boys over 12 showed no improvement; between the ages of 8 and 12, 28% showed no improvement. On the other hand 42% of the boys over 12 became dry as compared with 36% of the boys between 8 and 12 years.

The results of the second or the reconditioning approach are quite definite in attesting the value of the establishment of night habits. There were in all 78 boys in the experiment, which lasted from September 3, 1928 to January 29th, 1928. Again we may say that one month of dryness represented a cure.

The following tabulation indicates the results. I have rearranged these figures in order to show the age distribution of results.

It is significant that the total number of boys cured by this method during the four months period was 36% as compared with 34.4% cured during the Spring period and 28.6% in the Winter period as noted. It is noteworthy also that the oldest group of boys again had the largest percentage of cures. The effect of adolescence cannot be ignored in evaluating this result.

The question is sometimes raised as to the relation of such cures to levels of intelligence and I am, therefore, re-arranging the results of the night awakening or habit forming treatment in terms of Intelligence Quotients. The numbers are exceedingly small, particularly the group above 110 I.Q., so that adequate deductions cannot be drawn. It is not insignificant, however, to note that in the normal group there was the largest percentage of cure and the lowest percentage of unimprovement. It is probably not far from the truth to state that it is easier to establish new habits in normal groups than in the dull normal or defective groups and probably easier than among the intellectually superior group with their possibilities of greater emotional instability.

Above 110 I. Q.		11.5%
No.		Percentage
3	cured	33.3%
6	no improvement	66.67%
0	improved	
9	Total	
90 to 110 I. Q.		46.1%
No.		Percentage
17	cured	47.2%
11	no improvement	30.5%
8	improved	22.2%
36	Total	
Below 90 I. Q.		42.4%
No.		Percentage
8	cured	24.2%
14	no improvement	42.8%
11	improved	33.3%
33	Total	
78	Total	

These two types of experiments are presented for the purpose of indicating possible mass attacks upon the problem of enuresis in institutions. It should be borne in mind that no medication of any kind was employed; there was no alteration of habits of feeding or drinking; there were no adaptations of the hygiene of night, of bed clothes, of bedroom, of ventilation; no star charts were employed; there were no punitive measures established for failure. The enuresis was considered as a condition that could be discussed openly and freely and did not have inherent in it the necessity for shame or fear. The class approach and the individual awakening approach both demonstrated that a large measure of help can be given children without recourse to electricity, hypodermic medication, thyroid or pituitary extracts or the trial of a large number of medicaments such as belladonna and bromides. Every dogmatic theory as to the cause of enuresis is immediately ruled out by the percentage of cures attained within the short period of time by either one of these two simple approaches.

(Concluded on page 226)

Safety Principles in Pelvic Surgery

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The various operative procedures which the gynecologist is called upon to perform have a low mortality rate when compared with operations of equal gravity in organs located above the pelvic brim. The natural resistance of the female pelvic peritoneum has much to do with this fact. Nevertheless the fact that we can enjoy a relatively low mortality and morbidity should not deter us from a continuous search for improved methods of handling our patients. We should aspire to reduce our catastrophes almost to the vanishing point, although, of course, this will never be reached, on account of certain causes of mortality such as embolism which will probably never be entirely eliminated. We read of the various suggestions which are made from time to time to reduce operative mortality and morbidity, but frequently aside from the experience of the originator of the method, further comment is absent. This may mean that the method is of little value, but often such is not the case and it may have been incorporated in the routine of many clinics with very satisfactory results. It is the object of this paper, therefore, not merely to repeat what others have said, but to give my personal experiences with such methods as I have tried and found helpful, without any claim to originality.

In the first place, we all agree that previous to any major surgical procedure the patient should be subjected to a careful study, yet many times patients are admitted to a hospital one afternoon and operated upon the following morning and important data are entirely overlooked. This preoperative study should include, besides a careful history and examination, the study of the blood, blood pressure and renal function as a routine, with special investigations such as electro-cardiographic study and blood sedimentation test when indicated and probably much more frequently than they have been done in the past. The employment of preoperative blood transfusion is a valuable aid in preparing substandard anemic patients for operation whether the anemia is due to blood loss or sepsis.

In regard to the care of the intestinal tract, I am firmly convinced that preoperative starvation and purgation are relics of another age and serve no purpose other than to increase the postoperative distention and discomfort. House diet is given to all cases except emergencies until the night before operation and the lower bowel is emptied with a simple enema on the morning of operation. In this manner the patient's nutrition is not disturbed and she has a peaceful night's sleep before her operation—two very important factors in the postoperative course. Having employed this preparation for over five years, I have never had any regrets and certainly have not had any more trouble with distended loops of bowel prolapsing into the wound than I formerly had with the purgation preparation. Furthermore the morale of the patient on the morning of operation is much better than if her night's rest had been disturbed by abdominal cramps and frequent evacuations as the results of the administration of a purgative.

At the operation there should be as much speed as is commensurate with accuracy in technique, gentleness in handling the tissues and assurance of hemostasis, but when speed alone is the object sought, something else frequently suffers. Many gynecological operations are very long in duration, especially those requiring both

plastic and abdominal work, and a two-hour operation is not at all unusual. Frequently it is a display of wisdom to plan such operations in two or more stages, especially in women of advanced years or of the obese type. Similarly it is my belief that we do not realize the harmful effect of the Trendelenburg position when maintained over a prolonged period, especially in patients with a damaged myocardium. It seems plausible that many of the cases of cardiac dilatation and so-called "delayed shock" could be avoided by reduction of the time the patient is kept in the inverted position to a reasonable duration. The importance of a trained anesthetist and the use of as little ether as possible are so generally recognized that they are merely mentioned in passing.

After operation most patients need water and rest more than anything else, therefore water should be given by mouth after nausea ceases, or by rectum if not tolerated by mouth. If water is urgently needed, and it frequently is, and there is a contraindication to its oral administration, it is much more desirable to give a continuous subcutaneous administration than to depend on the rectal drip which is often not readily absorbed. Morphine or other narcotics should be given freely for the first twenty-four hours after any major operation, as the mental and physical rest obtained by this means more than counterbalances any ill effect from it. The bowels should be left alone for at least three days and then opened by a simple enema. There seldom seems to be a reason for the employment of eserine, pituitrin, etc., as a stimulant of peristalsis after operation. The intestines are always more or less parietic after a laparotomy and if given an opportunity will regain their tone without outside aid. The administration of intestinal stimulants during this parietic stage is like beating a crippled horse and certainly adds insult to injury.

Regarding helpful measures in specific operations, I have found the daily removal of residual urine in cases in which an anterior colporrhaphy has been performed, as advocated by Curtis, to be a most beneficial procedure. These patients should be catheterized frequently during the first forty-eight hours and thereafter once daily after voiding until the residual urine falls below one ounce. Prior to the adoption of this procedure, patients frequently gave evidences of bladder irritability for days or weeks after operation, but this simple treatment has almost entirely prevented such trouble.

Secondary hemorrhage after operations on the cervix, occurring about ten to fourteen days after operation, has been an occasional disturbing element in an otherwise smooth convalescence. Requiring packing for its control, the result of the plastic operation is often entirely marred by the pressure of this packing, which is usually inserted by the house surgeon under unfavorable conditions. This hemorrhage is usually due to premature absorption of the catgut sutures and in high cervical operations I am seriously considering a reversion to the shotted non-absorbable sutures, even though they have other disadvantages.

In the tragic type of ruptured ectopic pregnancy, Polak's method of watching the blood pressure will usually indicate the opportune moment for surgical interference. While most of these patients make nice recoveries in spite of copious internal hemorrhage, the use

of blood transfusions after operation will materially shorten the convalescence. In patients who have seemed almost moribund I have performed autotransfusion, as frequently recommended by German gynecologists, using the blood recovered from the patient's abdominal cavity with satisfactory results. In these cases blood must be given quickly and frequently satisfactory donors are not available, whereas the patient's own blood can be salvaged with little difficulty and injected into a vein.

In dealing with uterine fibromyomata which require operation, preoperative blood transfusion is a valuable aid when the hemoglobin is below 50. If hysterectomy be decided upon, the abdominal supravaginal operation is undoubtedly the quickest and safest type and should always be employed unless there are strong indications for panhysterectomy or perhaps the vaginal operation. Although there has been much discussion in past years as to the relative dangers of the complete and the subtotal hysterectomy, with many leading gynecologists sponsoring the complete operation, several of these men have reversed their opinions of late and it seems as though the subtotal operation is now being generally employed. The use of two ligatures on each main artery as has been done in the gynecological department of the University of Pennsylvania for many years requires but a few moments extra time but greatly decreases the hazard of secondary hemorrhage.

In the operative treatment of uterine prolapse, graded operations should always be considered. Only as much work should be done at one séance as the patient can easily tolerate and the division of the complete operation into two or even three stages will sometimes be a life saving measure. In this type of work we could learn much from the specialists in thyroid surgery in properly estimating the patient's tolerance.

Careful observation of cases of pelvic inflammatory disease has made me more conservative each year. There is no doubt that Nature can do far more in causing a resolution of pelvic inflammations than any surgery can do. Many of the cases admitted to my service are sent home without operation and subsequent examinations reveal a very satisfactory condition of the pelvic organs. Those patients who require surgery, usually patients who have had many acute attacks and have large hard pelvic masses, are frequently sent home after the subsidence of their fever with instructions to report for the operation three months later. This prolonged interval gives the patient a good opportunity to absorb her acute inflammatory process and when she does come to operation, it will be much easier for the surgeon, not to mention the increased safety for her.

A two quart tap water enema at the completion of abdominal operations was the routine of the late Dr. John G. Clark for many years. He called it his "internal hot water bag" because of the fact that in addition to giving the patient a large quantity of water, usually sufficient to tide her over the first twenty-four hours, the heat of the solution radiated through the colon to the abdominal sympathetic plexuses and tended to overcome shock. There is probably no abdominal operation where this enema is more clearly indicated than in operations for pelvic inflammatory disease. There is often considerable shock after breaking through extensive adhesions and at times there may be small perforations of the rectum or sigmoid incident to their separation from the pelvic lesions. If the enema is carefully given at the completion of such an operation, small perforations may be readily detected and repaired at once and thus a possibly fatal peritonitis be prevented.

This brief report is presented merely to emphasize

the details which have been found helpful and which can be recommended to those who are doubtful as to their value.

Medical Arts Building.

Treatment of Enuresis Nocturna

(Concluded from page 223)

The gain to a juvenile institution by such direct modes of attack upon enuresis is obvious from the results. Not merely is there the benefit of diminished laundry costs as a result of the diminished frequency of nocturnal incontinence, but the children cured and improved evidences marked gains that are of advantage to the institution. They reflect their new power in personality and in physical health, together with some intangible immeasurable advantages along the line of better emotional stability, greater intellectual application and finer social balance.

How much of these benefits is to be attributed to transfer as the result of greater development of self-control and better habituation towards resistance to bladder stimuli cannot be defined. The fact remains, however, that experience has demonstrated that by either of these methods approximately one-third of the children have been permanently cured and another third of the children have shown marked improvement within a period of three or four months. Regular attention to the class procedure and regularity in the awakening of children are necessary to secure any considerable gain in permanent dryness which can be of great advantage to the children and to the institution.

These procedures are suggested as advantageous methods preliminary to the institution of any special medication or the induction of any unusual physical or psychological technics on a personal basis. It is obvious that the plans proposed are without complicated details and can be utilized without cost to the institution. It calls primarily for the activity of children and is based upon the stimulation of wholesome interests and trends. It involves the creation of self-confidence, the supporting of new hopes and the establishment of a determination to reach the definite goal of self control over bladder function and the constant desire to attain it as quickly as possible.

I desire to acknowledge indebtedness to Mr. I. C. Heller and to Miss R. Cahn respectively for their assistance and cooperation in carrying out this experiment.
264 West 73rd Street.

The Value of Streptococcus Antitoxin in Puerperal Fever

A. F. Lash has made a study of the therapeutic value of a new concentrated streptococcus antitoxin in puerperal fever, basing his conclusions on the results in 57 patients in various stages of puerperal fever who were given serum-therapy, while 13 control cases received no serum. He concludes that the puerperal fever streptococcus antitoxin possesses specific value in acute endometritis with septicaemia due to the hemolytic streptococcus; there is also a favorable response in the non-hemolytic streptococcus infections. The potency of the serum as determined by toxin neutralization (Dick method) and by comparison with that of scarlet fever antitoxin of known therapeutic value shows a titre equal to that of the scarlet fever antitoxin. The antitoxic power increases with further immunization of the animals. The larger amounts of serum used in the earlier work on this subject were probably superfluous, as the only index then used for the repetition of the dose was fever, rather than the condition of the patient. To use fever as the only guide for serum-therapy may be misleading, since the antitoxin may overcome the toxæmia and thereby allow the leucocytes to overcome the streptococci, without causing an immediate drop in fever. In spite of the hyperpyrexia, the general improvement of the patient influences the defence mechanism favorably, permitting thereby the localization of the infection to the pelvis.—(*American Journal of Obstetrics and Gynecology*, March, 1929, p. 297.)

Recent Developments in Oto-Rhino-Laryngology*

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In attacking so vast a subject as recent developments in Otolaryngology, one is in doubt as to how far back should be considered recent, as no definite standard can probably be applied to all branches of the subject. The writer, from lack of time, will choose some of the outstanding, newer observations or methods of treatment in each particular branch of the subject, especially when those methods or observations are contrary to our time honored methods of the past.

With reference to the nose, the principal advances that have been made have been along the line of sinus infections and allergy, especially as applied to perennial hay fever or hyperesthetic rhinitis. Not much change has occurred in the operative technique but much progress has been made in the more accurate recognition of sinus conditions and in their palliative treatment, in contrast to the extensive radical sinus work as exemplified by the Ballenger and Killian operation. By the use of lipiodol or other opaque oils, either by injection, in the case of the antrum, or by displacement instillation, following the technique of Proetz, we are now in a position to determine, before operation, the size of the sinus and the condition of the mucosa and are thus able to exercise a finer discrimination in the selection of the cases that need operation from those which may respond to palliative treatment. In the case of the ethmoid sinuses, especially, operative interference is undertaken very much less frequently and very much less radically than formerly. A treatment that was brought out over twenty-five years ago by Dowling of Albany, but which received scant recognition for years, is now almost universally used by otolaryngologists. It consists of introducing into the middle and superior meati large packs, saturated with a medicament of choice, usually ten per cent argyrol or neosilvol. The pack is allowed to remain in situ for one hour or more, and by its depleting and tonic action upon the mucous membrane it results in the cure of many cases of sinusitis with the exception of the antral cases. A valuable adjunct to this treatment is the method of displacement instillation similar to that used with the lipiodol in the diagnostic work. Patients are instructed to lie over the bed, bringing their shoulders to the edge and having their heads hanging down toward the floor and then instilling the solution, applying moderate suction while the head is still in the inverted position. This displaces the air in the sinus, which is replaced by the fluid used in the treatment.

Another valuable advance has been made in the recognition of the important rôle played by sinusitis in children. Fortunately, sinusitis in children will usually respond to well directed palliative treatment following the thorough removal of tonsils and adenoids. In a small proportion of cases, especially of the antrum, which fail to respond to treatment, radical measures must be undertaken. It has been shown that many cases of chronic arthritis in children are due to sinus disease. However, radical work should not be undertaken until thorough study of the diet has been made, for it has been pointed out by Dean and his co-workers, Stucky, and others, that many cases of sinusitis in children clear up under the influence of correct diet alone. Vaccine

administration is a valuable adjunct in the treatment of sinusitis, especially in children.

With reference to allergy, the importance of foodstuffs in the production of the perennial hay fever is becoming more recognized by those most skilled in this work. The difficulty that has not been properly recognized in the past is that some of the food reactions are extremely minute and very readily passed over, and, as, pointed out recently in some cases do not even give a skin response although possibly the prime factor in the cause of the condition present. These cases are extremely difficult to handle because they usually have existed for years, having eluded every attempt at detection of the cause. As a result of the prolonged edematous condition of the turbinates, some permanent thickening of the tissues occurs, so that even after the cause is discovered and eliminated it is very difficult to attain a normal functioning nose. Some cases that show nothing on skin testing can be cleared up by a rigid and scientific elimination diet which will finally isolate the foods responsible. Unfortunately, this is a painstaking, patience-trying method and is not sufficiently used because of the failure to recognize its efficacy.

In the study of diseases of the larynx and respiratory tract, the greatest advances have been made along the line of treatment of lung abscesses and the refinement in diagnosis of chest conditions in general, by the use of opaque substances insufflated or instilled into the bronchi. The bronchoscopic treatment of lung abscesses, especially of the acute variety, has been a great step in advance. About anywhere from 25 to 35 per cent of these cases can be cured with from one to several bronchoscopic aspirations and about one-third more of the cases can be markedly improved so that today a comparatively small proportion of lung abscesses require surgical intervention. Most of the cases that do require surgical intervention are probably embolic in origin and do not communicate directly with the bronchus. Bronchoscopic treatment has also given quite good results in bronchiectasis, especially of comparatively recent development and not too great size. The use of lipiodol, bismuth compound, etc., in mapping out the bronchial tree, has done much to increase the accuracy in locating and differentiating various lung conditions and the bronchoscope itself has been responsible for bringing to light large numbers of cases of primary bronchial carcinoma, benign tumors, etc.

In the studies of the esophagus, the esophagoscope has brought to light a condition previously diagnosed only at the autopsy table, namely, peptic ulcer of the esophagus. This is a distinct entity probably due to an embryologic misplacement of a small area of gastric mucosa in the esophagus. If recognized and treated locally as well as dietetically, these ulcers respond within one to five years and do not tend to leave marked cicatricial contractures. The esophagoscope has also helped signally in the operation upon diverticula of the esophagus, for, by introducing the esophagoscope into the diverticulum and turning on the light, the surgeon is greatly assisted in his dissection of the sac from the tissues of the neck. In all this work with the bronchoscope and esophagoscope, Philadelphia, through the agency of the Jackson clinics, stands in the forefront.

In still another field, we can point with pride to one

* Read before the Medical League on April 22, 1929.

of our own men as leading in the research to overcome that universally fatal condition of meningitis as an otitic or nasal complication. Dr. John Kolmer has been doing pioneer work in this field and has succeeded in combating the disease in animals by the use of ventricular lavage combined with drainage from the cisterna magna and the spinal canal and also by means of daily bilateral intracarotid injections with certain antiseptics or sera. Thus far, unfortunately, no human cases have been successfully treated, but this is probably not due to a defect in the method but more to our defect in diagnosis and our timidity to do such necessary radical work until symptoms are so definitely marked and the pathological process has progressed so far that medical aid is impossible. As our technique becomes perfected and our diagnosis more accurate, and especially when some serum or better chemotherapy is devised which will be more active upon the bacteria without having deleterious effect upon the delicate nervous tissues, the method will probably prove successful also in human beings.

Another advance in the diagnosis of intracranial complications of mastoid infection is the Tobey-Ayer test. It has long been known that any condition which obstructs the return circulation from the brain gives rise to a rapid increase in the cerebrospinal fluid pressure. Taking advantage of this knowledge in cases of thrombosis of the lateral sinus, it has been found that if a needle be introduced into the spinal canal, connected with the spinal-manometer, and then pressure be made over the jugular vein on the diseased side, no rise or a very slight rise will be detected. If, now, pressure be made over the jugular vein on the healthy side, an immediate rapid rise in the cerebrospinal fluid pressure will occur. Another similar test, more difficult of application and not much used today, is watching the veins of the retina become more tortuous and full by pressure over the jugular vein on the healthy side, no change occurring on pressure over the diseased side.

There has also recently been a revival of the movement to employ the partial radical mastoidectomy in preference to the complete radical in selected cases. This, however, is as yet a much mooted question.

In the field of aural diagnosis, the various types of audiometer are placing in the hands of the otolaryngologist a more accurate method of recording his findings for future reference than thus far has been possible. In the use of tuning forks a personal element had played an important part and the opportunity for variation is very great, whereas in the audiometer we have a scientifically constructed instrument which gives a definite record which can be repeated any number of times without any elements of personal interpretation on the part of the operator.

Thus, in the small amount of time at our disposal, we see that there is considerable progress being made in all fields of oto-rhino-laryngology and that the condition is one of healthy growth and not sporadic expansion. The importance of cooperation of various fields of medicine is being brought more and more to the fore as the various refinements in the specialties are attained.

2106 Spruce Street.

Mercurochrome Stains

The stains which are so disliked by the nursing staff are easily removed by Dakin's solution.—Wright, *The Practitioner*.

Mercurochrome

Mercurochrome is a valuable local antiseptic, especially for the skin and genito-urinary tract. When introduced into the circulation its action is probably in the nature of protein shock, and when glucose is added to the solution injected, it tends to have a cumulative action.—Wright, *The Practitioner*.

Ringworm of the Hands and Feet

We are again entering upon that time of the year when we find the return of certain seasonal diseases. Among the most distressing of these is dermatophytosis, or ringworm of the hands and feet.

The fungus has apparently become almost ubiquitous, being found in such frequently used places as the public bathing pavilion, the shower room at the club, and, indeed, in your own bathroom. It is necessary only for one with infected feet to emerge from the dressing room in the bathing pavilion, and walk down the corridor on the central runner to the beach exit leaving behind him a long trail of fungi, from which others following the same course may find ample opportunity for self inoculation.

The disease usually begins benignly enough. The fungi find their portal of entry through an abrasion of the skin, and having attained a suitable soil start increasing the size of their little colony. This produces inflammatory reaction with the development of papules, vesicles and pustules, which are found most commonly on the plantar surfaces of the feet, and between the toes. It is to be noted that these areas remain fairly well localized, and are sharply circumscribed. Upon the toes, the lateral surfaces are most commonly involved, and invariably the contiguous surfaces of two toes are affected. Under the toes, the lesion frequently looks like a mass of macerated, exfoliating epidermis.

Upon the hands, we have a similar localization to that of the feet, involving particularly the contiguous surfaces of the fingers, and further involvement is usually of the palms, extending from the fingers, always with a sharply circumscribed border.

The diseases to be considered in differential diagnosis are: pompholyx, dermatitis venenata, e.g., from rhus toxicodendron, and occupational eczema. Of course, syphilis, arsenical dermatitis, and other diseases may also be considered, but the first three are the most common.

Regarding pompholyx, the question repeatedly arises as to how truly this is a distinct disease entity. Many authors hold that it is identical with dermatophytosis, or, perhaps, the early stage of this latter disease. Surely pompholyx, as a separate disease, does not have the chronicity of dermatophytosis. While their location is the same because of the preponderance of sweat glands in these areas, it occurs only during the excessively hot weather, and disappears quite rapidly with a day or two of cooler weather.

Poison ivy produces lesions similar to those of dermatophytosis, but in addition there are frequently large bullae. Poison ivy also extends to other areas on the body because of carrying the toxic substance from the old lesions to uninvolved areas. The course is shorter, but usually more intense.

The ordinary types of eczema are not sharply circumscribed, but occupational eczema frequently is. The history will aid greatly in the differential. Occupational eczemas improve when the work is discontinued temporarily, regardless of season, whereas dermatophytosis generally improves during the winter season, regardless of occupation.

The course of dermatophytosis is prolonged, and is markedly subject to recurrences. While under treatment, the skin may become entirely free from lesions before all the fungi have been removed, and it does not take long for the colonies to again grow sufficiently large to reproduce symptoms. To help overcome this possibility I believe it is well to continue prophylactic treatment for several weeks after a clinical cure has been accomplished.

In looking over the literature regarding the treatment of this condition, one will find that many remedies have been used,—some of them quite simple, others extremely complex. Among those of more standard quality we find Whitfield's ointment, which is salicylic acid and benzoic acid with benzoated lard as a base. This probably has been used more extensively, and effected more recoveries than any other single prescription. There is, however, a marked difference in the reaction of individuals to variations in strength of the prescription. While stronger preparations are advisable if the patient can tolerate them, it is frequently necessary to make them quite weak. Ultra-violet therapy and x-ray therapy are extremely useful adjuncts to this treatment, and do much to shorten the course of the disease.

Prophylaxis, about the home particularly, regarding the use of individual towels and hand brushes, as well as the solitary ownership of socks and slippers is essential. The affected individual should never, at any time, place the bare foot upon the floor, even in stepping from the tub, for other members of the family may thus contract the disease. Fibre, waterproof slippers may be bought at very small cost, and may be destroyed after wearing. These are a great prophylactic aid.—E. ALMORE GAUVAIN, M.D., in *Long Island Med. J.*

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Women in Medicine

There seems to be a merry war in England with regard to the status of women practitioners, which is rather amusing to us, who take it as a matter of course that the fair sex are entitled to their rights—"and then some."

The serious indictment brought against women doctors by our English brethren is that fifty per cent of them marry, hence the time and money spent in their education is wasted (!). This is an argument that does not appeal to us, who still believe in the old maternal instinct. However, complications are apt to arise when husband and wife put up their signs together, as happens too often on the stage.

In spite of our lifelong advocacy of women's rights, and hatred of their wrongs, we confess that temperamentally women physicians are more at home in the laboratory and in research work than at the operating table. There are notable exceptions, few as they may be.

Women are no longer the tender, clinging vines of the despised mid-Victorian age, and the inborn chivalry of the decent male has not declined because of *la lutte éternelle*. We like them all the better because they have developed opinions independent of us, and must admit that their much abused "intuitions" often carry them nearer to the truth than our masculine dogmatism. Give 'em a chance and help, not oppose, them in their efforts at emancipation from the prejudices of the past.—H. C. C.

Prohibition

However we may deplore the rigid requirements of the Volstead Act and the humiliation to which medical men are subjected by it, we must admit the striking fact that the elimination of the corner saloon in this city has been an unmixed blessing to the laboring man from a sanitary, as well as economic, standpoint.

Time was when during such continuous warm weather as we have experienced recently the columns of the daily press would have resembled the reports from a great battle, teeming as they did with fatal cases of heat-prostration. We can recall the days when the wards and corridors of old Bellevue were crowded with the cots of such victims.

The fuss that the papers make about the heat is deplorable, as it leads directly to universal complaint about a temperature of 85 deg. to 90 deg. Fahr. We men have not yet learned to dress more sensibly, as people do in the tropics, and we do not carry on as imperturbably as they do, or avoid the sun in the heat of the day, so far as we can without interfering with our daily work. There is a large mental (we hate that over-worked term "psychical") element in our discomfort.

What was the real cause of so many heat-prostrations? Why have we noted such a paucity of cases during our recent experience?

Let us be frank about it. Booze, not heat and humidity, was the real cause. When workers in the open and in laundries used to send out and buy large quantities of beer at the noon-hour (*more* than one and one-half per cent), it "got" them every time and kept the ambulance-surgeons on the jump.

Military hygiene long ago pointed out this elementary fact, but we were slow to recognize it in civil practice, where the same discipline could not be maintained.

In this age of efficiency, we must not overlook the risks of intemperance in our work and sports.

This is the advantage of daylight saving, that one can, to a considerable extent, confine one's physical activities to the cooler parts of the day. The working class is safeguarded by the law, but how about the numerous speakeasies, which minister to the amusement of the tired business man? The statisticians of insurance companies and boards of health would seem to prove that "heart disease" is now the most prominent cause of death in men in the prime of life and that it is aggravated by excessive physical exercise in the heated term, but the family physician knows that intemperance in the broad sense is the etiological factor, not only in work, but in play.

As for the man or woman who has passed the sixth decade, temperance is a self-evident necessity, but this is a matter for self-control, not for the law.—H. C. C.

The Super-Babbitts Advise Us

It is becoming a "key industry" among the super-Babbitts to give the great medical groups in convention assembled much gratuitous advice as to how medicine should be practised in order to conform with the principles upon which big business is conducted.

Their talk is always heavily laden with the technical lingo of modern business. They talk in terms of mass methods, of production and consumption of goods, and of costs per unit.

We are old fashioned enough to deplore this particular indoor sport.

If medicine is ever practised after the fashion prescribed by the industrial doctors it will possess worse faults than any now ascribed to it.

And the super-Babbitts themselves would have none of it. Like prohibition, it would all be for the other fellow.

These gentry should mind their own business and play golf. And those who invite them to the conventions—doubtless their personal physicians—should “lay off.”

It will be a long time before any doctors will appear before an association of super-Babbitts to advise them on the running of big business according to medical principles.

Statistics

“Donnez moi des chiffres je vous prouverai tout,” said an old French cynic, and his statement would seem to be verified in this tabular age. Every medical paper, read and published, is composed in exactly the same way—first statistics from the author's own experience, then those evolved from patient research in the library, finally the summary, often setting forth a brand-new theory.

We confess that we are too often content to read the last only.

We have no fault to find with the concise and definite (or indefinite) way in which the author's conclusions are stated. It is a great improvement over former methods, as loose “opinions” have given way to facts in this practical age, but the busy reader is apt to skip the prelude. Our younger generation—and reviewers—do not bother to wade through the descriptive parts of novels and movie legends but get down to action.

Why not cut out some of the figures in medical articles, which are a burden to readers and editors, as well as to the patient typesetter.

“Of making many books (and reprints) there is no end.” “Browsing” is an appropriate term for the modern reader, who does not bother much about the niceties of literary style, though in a vague way he recognizes it in the attractive works of Durant and Ludwig, and in the many gems scattered throughout our best-selling magazines.

We seek our literary pabulum in a predigested form and “much study is a weariness to the flesh.” Therefore let medical writers give us more abstracts and fewer statistics.

They will be just as effective as advertisements—the specialist's only legitimate channel for making the lay and medical public aware of his wide experience in his own line of work.—H. C. C.

The Shattering of a Dream

It transpires that Secretary Wilbur is against the creation of a Federal Department of Education, with its head a member of the President's cabinet. By the same token it would seem that he would be against a Federal Department of Health, which some folk still fondly imagine to be in sight because of the very fact that Dr. Wilbur, a former President of the American Medical Association, is now a member of the sacred Washington circle, yea, even of the “Tennis Cabinet.”

What the Secretary of the Interior proposes is “the closest kind of cooperation between Federal agencies having to do with education and the school authorities in the States and cities all over the country. “His purpose is to make Washington a sort of general clearing house for educational intelligence and guidance. Everything that can be learned from experience and the latest practice will be made available there. Information will be eagerly gathered on a great scale. Whatever is best and most promising in educational methods will be

pressed upon the attention of local institutions anxious to know how they can be improved. The aim is to develop the keenest national interest in education, but to leave the working out of all theories and projects to the localities most directly concerned.”

Educators hereafter will get nothing from Washington except advice and will have to do things themselves. A bureau will collect all available information and be prepared to pass it along upon request.

It would seem to follow logically that matters of health will continue to be dealt with in much the same manner, and the dream of a Federal Department of Health is probably over for another four years.

Here is an instance in which the hateful term “bureaucracy” seems to be invested with a political halo.

Another physician, Hubert Work, also an ex-President of the American Medical Association, aroused mixed feelings as Secretary of the Interior under President Coolidge.

“Boring from within” seems to be a meaningless phrase in medical parlance.

Mrs. Dennett's Successor

Mrs. Dennett having been disposed of, Canon William Sheafe Chase, Superintendent of the International Reform Federation, announces that he will himself enter the field of sex education with two or three pamphlets. He “will try to take the minds of children as far as possible from sex” (!).

Of course, the good Canon makes it clear that he is not interested in the market left clear and thoroughly advertised by the squelching of Mrs. Dennett, against whom he proved a formidable opponent.

We hope that Canon Chase will not himself become embroiled with the authorities. Good intentions do not in themselves guarantee safety in this field of education. We feel no sympathy, however, with those wicked persons who would welcome some humorous (to them) contretemps of the kind.

But the thought does occur to us that the Canon's determination to take the minds of the children as far as possible from sex may, in practice, excite more thrilling speculation and adventure than franker stuff, except, perhaps, among the duller groups.

Have a care, good Canon, have a care!

Miscellany

Dr. Clendening on Birth Control

Much of the talk of the birth control agitators is “bunk” and “hooey,” according to Dr. Logan Clendening, M.D., writing in the July “Plain Talk.” In “Plain Talk” he comes to the defense of the profession, charged by the birth controllers with withholding secret birth control information from the suffering public. “Bunk,” says the doctor. “There is no effective method of contraception.”

“I do not mean,” reads his “Plain Talk” article, “that the profession is not aware of several procedures said to be effective. But it also knows by experience that none of these has a good record of success; and, having some little pride and decency, and having the record of the responsibility of an honorable guild behind them, its members naturally refuse to get their patients into trouble by allowing them to rely on a procedure which is very likely to fail.

“That is the whole conspiracy of which the medical profession is guilty—of not getting people into trouble

by allowing them to depend on a lot of faulty and hazardous methods.

"Furthermore, there is no method that is secret. That is, unless the drug clerk on the corner is an inscrutable sphinx. There is no method of contraception which is not known to every adult male not actually the victim of microcephalic idiocy at the moment of his puberty. The reason professors in medical colleges do not lecture on the subject is the same as the reason they do not teach the alphabet—everybody already knows it.

"Of course, the birth-controllers imply that this is not true. The very corner-stone of their thimble-juggery is that they know an absolutely perfect method; and they appear to indicate that you—poor deluded reader—do not know the method. In fact, their whole appeal, I am sure, rests upon just this very foundation. It stimulates the inferiority complex of all the readers, who sit and wonder just what this wonderful, perfect, happy secret can be. Bunk, boys and girls! Hooey! They don't know any secret. They do not know anything you don't know.

"As to the iniquitous postal regulations, let me abjure you, fellow citizens, not to join the hue and cry to have them changed. Let well-enough alone. If the restrictions over birth-control literature are lifted, you will simply have some pamphlets put in your hands which, if you believe in them implicitly, will get you into a whole lot of trouble."

Deaths from Alcoholism

The statistics of deaths from alcoholism during a period of twenty-seven years furnish an interesting sidelight concerning the consumption of liquors containing a considerable percentage of alcohol.

Prior to 1900 trustworthy statistics were not compiled. Since that time the Bureau of the Census has made the deaths due to alcoholism and cirrhosis of the liver a special feature in the yearly report of mortality statistics. The registration area from which the figures are obtained included nearly 80 per cent of the population of the United States in 1900; in 1926 the area included forty-one States and twenty-five cities in other States. The statistics for 1927 and 1928 have not been published, but it does not require the wisdom of a Solon to make an approximate estimate of what they will be. The figures that follow are the averages per thousand of population. By this method mortality rates may be compared:

Year	Rate	Year	Rate
1900	6.4	1914	4.9
1901	6.0	1915	4.4
1902	6.1	1916	5.8
1903	6.7	1917	5.2
1904	5.8	1918	2.7
1905	6.2	1919	1.6
1906	6.4	1920	1.0
1907	7.3	1921	1.8
1908	5.0	1922	2.6
1909	5.1	1923	3.2
1911	4.9	1924	3.2
1912	5.3	1925	3.6
1913	5.6	1926	3.9

The figures show that in the eighteen years ending 1917 the death rate had gradually declined, as is shown by comparing six-year averages. In 1907 a serious financial panic was followed by a long trail of suicides and deaths from alcoholism; in 1918 two and one-half million young men were overseas; at home the influenza pandemic robbed alcohol of many victims. In 1919 the prohibition laws went into effect and for a time the death rate dropped to the low point in the history of the case.

But the drop was for the time being. The case awaited the arrival of the bootlegger, and that individual came promptly—came in multitudes, with bags and more bags of money. As a result, the death rate from alcoholism has increased in the registration area and is rapidly reaching pre-war rates. In about a dozen States it has passed pre-war rates. The Bureau of the Census has not announced the rate for 1928; applying the usual formula, however, it will exceed the average for the six years preceding 1920.

Is as much liquor consumed at the present time as in pre-war days? The foregoing statistics indicate that consumption has decreased—not because of the efforts of Secretary Lowman, but for the reason that the drink which formerly cost fifteen cents now sets the purchaser back not less than five times that amount. There is no Volstead law in Great Britain, but the deaths from alcoholism have fallen in about the same ratio as in the United States in the same time. An explanation is not hard to find—it is the high price and not the moral effect of a "noble experiment."

The charge that the prohibition laws are a usurpation of powers belonging to the States has been made; it has been denied also. Incidentally, if the Federal Government has usurped the rights of the States, it is because State authorities have refused or have failed to execute their own laws. So far as the moral obligation of the prohibition laws is concerned, former President Coolidge put the matter in a clear light in a single sentence in his address before the American Bar Association: "The attempt to dragoon the body when the need is to convince the soul will end only in revolt." To this epigram one may add that a helpless drunk possessed of a desire to become sober is on a far higher moral plane than one who has been clubbed into sobriety by the coercion of statutory laws.—Professor Jacques W. Redway, in *The New York Times*.

Fable of the Pituitary and the Progress of Civilization

A celebrated Behaviorist concluded a series of lectures on Purposive Guidance and Human Destiny by subjecting his students to a brief catechism.

"Mr. Smith," he said, "please name one striking instance in respect to which even the highly civilized Greeks figure as the victims of a gross superstition."

"The Greeks," said Mr. Smith, "entertained the comic notion that the seat of the vital function is in the liver."

"Very good," said the Behaviorist. "And why do the cannibal Papuans, Miss Jones, so avidly devour the heart of a slain enemy?"

"Because the Papuans naively believe that the seat of life is in the heart," said Miss Jones.

"And the Dolichochukchis of Northern Siberia, Mrs. White?"

"They are divided into two clans," said Mrs. White. "One bases its rites on the dogma that the seat of life is in the spleen, while the other has developed a set of institutions based on the pancreas."

"Excellent," said the Behaviorist. "And, Mr. Thompson, throwing a casual glance through time and space, what other instances of a similar benighted state of mind do we encounter?"

"The Zeugmas of Ceylon believe the citadel of life is in the navel," said Mr. Thompson. "The Leukodendrons of Northern Australia worship the kidneys. The Mbumbus of the Kalihari Desert think the vital principle abides in the gall."

"Very good, indeed," said the Behaviorist. "Such indeed are the aberrations of human mental behavior in its

painful upward march. Whereas the truth is, of course, Mr. Green?"

"The truth as we have demonstrated it," replied Mr. Green, "is that the control of human destiny is in the Ductless Glands. By sufficient mastery over the thyroid and the pituitary we shall, without question, be in a position to determine sex, establish an average height of 6 feet 2 inches for men, abolish the vermiform appendix, solve the traffic problem, abolish crime and poverty, revise the Silesian boundary, render superfluous the League of Nations, determine automatically which is the mildest cigarette on the market, and in other ways insure the permanent security of the Great Society and of the Good Life."—*New York Times*.

Doctors and Lawyers

Editor, Public Forum:

The June issue of the *MEDICAL TIMES* is devoted to discussions on medical jurisprudence. Every doctor ought to read the fascinating article on criminal abortion, if for no other reason than to understand the essential difference between the legal and medical mind, the former being ruled by precedent, the latter being a law unto itself. Perhaps this is the principal reason why it is so difficult for the expert witness to explain his attitude to the satisfaction of the bench, bar and—"jury of his peers" (?).

The able jurist who seeks to clarify the historical and modern attitude toward criminal abortion struggles bravely with this vital question, but his summary leaves the medical reader in a sad state of confusion when he quotes the revised statute in the State of New York, which affirms that every practitioner who prescribes an oxytocic for a woman, "whether pregnant or not" (!), is guilty of abortion and "is punishable by imprisonment in a state prison for not more than four years," etc.

In other words, when we seek by medication to treat a patient for delayed menstruation, who presents no symptoms or signs of early pregnancy, we may be regarded as guilty of felony in the eyes of the law.

"Who then can be saved?"

New York City

H. C. C.

May 31, 1929.

(In the *New York Medical Week*).

More Pay Clinics

Extension of the activities of the Julius Rosenwald Fund, heretofore chiefly concerned with building Negro rural schools, to include support of medical services for people of moderate means, is announced by Edwin R. Embree, President of the Julius Rosenwald Fund.

Dr. Michael M. Davis has been appointed to the executive staff of the fund as Director for Medical Services. He is known throughout the country as an authority on hospitals and clinics and as a writer on public health subjects. As executive officer of the committee on Dispensary Development he was responsible for the organization of the pay clinic in New York City of the Cornell University Medical College. In the last few years he has been studying hospital problems for the Rockefeller Foundation. Special attention will be given to pay clinics.

William B. Harrell, now assistant auditor of the University of Chicago, has been appointed secretary and controller of the Rosenwald Fund. Clark Foreman, a graduate of the University of Georgia, now with the Phelps-Stokes Fund of New York, has been appointed associate field agent for Southern schools and colleges.

Commenting upon the new work which Dr. Davis is to direct, Mr. Embree, President of the Fund, said:

"Great loss in human welfare and happiness and in economic efficiency is caused by sickness, much of which can be cured or prevented by modern medicine. While the brilliant achievements of medical science are among the triumphs of the century, the full benefits of recent discoveries and present knowledge do not yet reach the average man. It is common knowledge that people of moderate means find it harder to get good modern facilities for diagnosis and treatment of illness than do the poor and indigent through charity services and free hospitals."—*New York Times*.

Administrators for Hospitals

In the public mind hospitals are considered institutions presided over exclusively by nurses and doctors. Most people seldom realize that there must be some sort of administrative power guiding the routine and controlling the varied activities of so great a plant as the modern hospital. The administrator of a hospital has a job not unlike that of the executive head of a great business organization. Within the last fifty years the growth of hospitals in the United States has been phenomenal. In that time the population of the United States has somewhat less than doubled, while the number of hospitals has increased from 150 to more than 7,500, and the number of hospital beds has grown from 35,000 to 860,000. The annual maintenance charge for hospitals is more than \$600,000,000, while the annual capital expenditure for new buildings and improvements is between \$200,000,000 and \$300,000,000. This puts hospitals into the category of a billion-dollar business.

Some time ago the Rockefeller Foundation financed a special study of the need for training hospital executives, and more recently it has sponsored a similar investigation, the results of which are published in a booklet called "Hospital Administration: A Career," by Michael M. Davis. He has secured valuable statistics from the American Medical Association and from physicians, nurses, sisters and laymen who occupy positions as hospital superintendents.

In general, he has found that the training of such executives has been too haphazard. There are no schools to prepare them for their work, and the special college courses which would be beneficial are few and far between. The work has been learned chiefly through apprenticeship or by the method of trial and error. Hospital officials who make the choice of a superintendent find no organized machinery to aid in their selection. Generally they look to the following groups: Physicians, nurses, men with business (and sometimes with engineering) experience, and men or women skilled in some special branch of hospital work. The need is for a source which will supply administrators capable of coordinating the medical, community and business aspects of the hospital. More precisely, Dr. Davis puts it:

The fundamental present need is for a Research Institute in hospital and clinic administration. This should be established in at least one university of standing. It would develop the educational material which is needed for the practical training and for the academic work. It would actually furnish this training to students. . . . The most essential requirement for success * * * is a leader experienced in hospital administration and in teaching, and free from the burden of detailed administrative responsibility.

It is estimated that the annual budget required to begin such a work would be "less than one two hundredth of 1 per cent of the annual hospital expenditure." An experiment so hopeful of good results should not be long delayed for the want of funds.—*New York Times*.

THE PRACTICING PHYSICIAN IN PUBLIC HEALTH

JAMES N. VANDER VEER, M.D.

THE ADDRESS OF THE PRESIDENT OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK BEFORE THE ANNUAL CONFERENCE OF HEALTH OFFICERS AND PUBLIC HEALTH NURSES AT SARATOGA, ON JUNE 25, 1929.

Albany, N. Y.

As President of the Medical Society of the State of New York I bring its greetings to the State Health Department, Health Officers, and Public Health Nurses here gathered, and the appreciation of the Society for the privilege of participating in the discussion of the questions of public health.

So much has been accomplished in preventive medicine by our State Health Department as a whole, and its components in the various Counties through you, that congratulations are in order. And yet many aspersions have been cast upon the doctor for his apparent lack of interest in the same. However, many of you who sit before me now are the same doctors that will sit before me in our own State and County medical meetings and discuss these same questions that come up from the other angles than may be put forth here in such a meeting.

While it is unbecoming in a speaker to criticize in a negative manner one who has preceded him on the program, and is also your guest, I am, however, going to be so bold as to crave permission to make the statement that the topic of Dr. Wynne's address is self-evident to the doctor, who surely vaccinates in most instances those who have come in contact with a case of smallpox (where allowed by the contacts); and gives prophylaxis to those who are in the same family where exists a case of diphtheria (where permission is granted); and so could examples be spun out to any length to prove that the doctor is alive to preventive medicine and its economic soundness.

But—and here lies the crux of preventive medicine—the practising physician cannot expend the time in argument with a recalcitrant mother, father, or grandmother as to why Johnny should be given the Schick test or be immunized when sister Susie has diphtheria. His time must be converted into dollars and cents as it is his capital investment; and in the present, the public only sees him as an actor in curative medicine *after* Susie and Johnny have become ill. And his efforts are limited in his production of wealth and in work done only by his physical endurance in many instances, and by the brains which he puts into his efforts.

Here is the question put in this manner as the doctor sees it. If we can convince the *average person*, and the *public* as a whole, that preventive medicine is worth while and pays in dollars and cents, then we have a common ground for all agencies to unite and forward a broad program.

The doctor, as an individual physician, is trying here and there to fulfill his part as a member of various health groups; but he acts as an individual, and in many instances because of his desire to fulfill his lay civic duty. I am glad to say that also the Medical Society of this State is earnestly endeavoring to do its share to forward this immense movement. Through its various committees, in a small way perhaps, it is attempting to spread the gospel of health, but it lacks the essential of that which is most necessary—namely the large finances whereby the public may be reached through the press, such as are at the command of the State, and in the hands of many philanthropic organizations.

Its resources are only those from the dues of its own members. It has no large gifts to adapt to its program,

and under present conditions should not directly accept endowments demanding subservience to a program other than what it, as a Society, might determine. As a result its efforts are dwarfed in comparison with those of lay health organizations who yet leave to the doctor the work of rehabilitating those who are weak and are falling by the wayside through disease.

Those who are sick and diseased are now occupying and filling the mind of the practising physician, and his work must naturally be at their beck and call. But when the education of the public as a mass, and as individuals within that mass, has been accomplished, by more than the mere scratching of the surface as we now see it, the physician will be found as the one who has largely accomplished this result as an individual in his community, with the help of the other agencies concerned.

He has but to be furnished individually in each little hamlet, or large city where he may reside, with the proper educational material as the sinews of war, to teach the public to demand preventive medicine, and then from school children on up through the grownups will our hopes come true.

The failures of such a program somewhere along the battle front are found in the individual physician or local officers of organizations, whose carrying out of orders and plans are failures because of their own inability to forward the general good, and because they cannot deal intelligently with their inferiors or superiors, and should, therefore, as an army, be due for demotion.

The successes of such a movement come from unanimity of thought and action, after plans have been made by leaders of broad minds, in correlating all the forces which can and should be brought to bear in this one effort.

In this effort of preventive medicine your State Medical Society seeks to play its part, and asks that it be invited in every instance to take its proper place in the great plan now evolving, so that each of its members may know what is expected of him, and may be made to see the just reward which will be his, when the battle has been won. Success will be in the proportion that each recognizes the advantages of the ammunition of different types utilized along the whole line.

As in an army, officers and men are lost and must be replaced, so is it in a health fight—to say nothing of the thousands being born every day who must first be taught the primer of good health in the school and in the family, and then be educated as adults to follow naturally the higher problems as those of second nature.

The Medical Society has to educate yearly its fledglings, as must the State through your Health Officers Association educate its new local directors—and together we must unite to educate those born this very minute as I speak, to a higher degree than are those who are now about to pass to the Great Beyond.

This as I see it is our bond of union in such a vast and wellnigh limitless field.—*N. Y. State Jour. of Med.*

Height Estimation

The length of the humerus multiplied by 5.06, or the length of the femur multiplied by 3.66 equals the height of the man.

AMERICAN SOCIAL HYGIENE ASSOCIATION—SUMMARY OF ACHIEVEMENTS FOR 1928

Dividends in Don'ts

Oftentimes thousands of dollars are saved to communities or states by pointing out to them that some measure or group of measures under consideration is unsound and by showing how and why this is so. In brief, success in any effort is most readily achieved by the individual organization knowing not only what to do but what to avoid. Most of the advisory work of the National Association is aimed toward giving direct information on these points. This advisory service is rendered both by correspondence and through field work and it can be rendered only by a group of specialists who have learned, by study and experience, what can best be done and best be omitted.

To do this kind of work the Association must keep in constant touch with social hygiene activities, not only in the United States but throughout the world. It must study social hygiene programs on the spot and have first hand knowledge of all the factors involved in their success or failure. It must be in a position not only to make recommendations, but to justify them. For these reasons it is essential that most members of the Association staff be in the field a large part of the time.

In essence, every field trip may be summed up in two words, "giving" and "gaining," the accompanying term in both cases being "information"—using the word in its broadest meaning. This field work supplements a continuous series of referenda on moot questions and problems in which the learning and experience of the Association's General Advisory Committee and the advice of all interested members are called into service to aid in the logical and efficient development and advancement of a soundly-conceived program.

A few examples may illustrate the care, thought, and labor which go into a project after your designated officers have voted to have it done:

(1) *A city social hygiene survey:*

The most recent one undertaken involves the services of 12 staff members for periods ranging from 2 to 12 weeks each, or a total of 58 weeks. It includes a field study of the social hygiene activities carried on in that city by both official and voluntary groups. The medical, legal, protective, educational, and public informational aspects are each to be given attention and the final report will contain, in addition to the finding, a series of recommendations which will be followed up by the continuation committee.

(2) *A pamphlet for boys:*

The original manuscript was based on material found of value by a state health department lecturer in his talks to boys. This was revised by two members of the Association staff and then submitted to forty educators, physicians, publicists, and others for comments and criticisms. After receipt of these advices the rewriting began in earnest and the pamphlet, now on the press, is one which promises to be of value for several years. We still consider it as an experiment, however, and shall hope to have your views on it when it appears in the January (1929) *Journal of Social Hygiene*.

(3) *A motion-picture revision:*

When medical schools and societies use motion pictures—say, for instance, our film on "The Diagnosis and Treatment of Syphilis"—they expect to have only correct procedures and statistics appear on the screen. Procedures change, as do statistics, and the task of keeping scientific films up to date is no easy one. You would be

interested to "sit in" on a revision conference and to go over a film, foot by foot, with the group of ten or twelve specialists—physicians, laboratorians, statisticians, and nurses, who are working on it. Their directions regarding deletions, additions, and changes are carefully noted and followed, after which the revised film is shown to a larger group for further criticism. Then you may see it used at the meeting of a state medical society or being shown to the medical students of a university but it never finishes being the subject of further discussion and criticism; it never reaches that state wherein it may claim, dogmatically, "I am a perfect product".

(4) *A social hygiene bibliography:*

"Have you a list of reliable books in your field?" is a question asked of the Association thousands of times yearly. That we can answer "Yes" is due to the constant consideration and guidance of a large group of advisers and consultants who study new and old social hygiene literature and spend many hours discussing the merits of various volumes. A unanimous recommendation is required before a book finally arrives in the selected list, and it must stand up before a series of searching tests. "Is it scientifically accurate?" "Are the facts adequately presented?" "Is the book sound in logic and written with due recognition of the problems of the group to which it is addressed?" These are some of the questions asked. The list of books is not an inclusive one and many sound volumes are not included because of their technical character. It serves, however, to furnish a "first-purchase" guide for many librarians, parents, social workers, educators, religious leaders and others wishing to be generally informed on social hygiene subjects. Advanced and technical references are supplied to those persons who wish to study more deeply in this field.

These four examples are typical of the democracy of judgment which guides Association administration and they illustrate one of the main reasons for the consistent and gratifying progress being made in all sectors of the program. To analyze these advances even for the year 1928 would require a book rather than a brief folder. We shall adhere, therefore, to the year's "high lights," letting the chips of detail fall where they may. But you, or any other member or friend, are welcome to detailed information on any aspect of the Association's program whenever you wish to have it. Now for those "high lights!"

Strengthened Forces

Topsy "jes growed," but our record for 1928 can be stated much more tangibly.

The addition of more than 4,000 new members for the year brings the total membership to 10,500. The Membership Committee isn't crowing—but you can't blame them for feeling "pretty well pleased," particularly as you and other gave your support in such generous measure to this effort for new strength.

Educational Measures in School, Church and Home

The demand for lectures and study courses has grown to so great an extent that the Association has had to select its broadest opportunities more than ever before.

During 1928 (based on returns from January 1st to December 1st)

(a) 450 universities, colleges and normal schools were added to the 202 institutions previously dealt with in the joint study of materials and methods for integrating social hygiene education in their curricula.

(b) 633 lectures by Association staff members were given to 86,000 students and faculty members in 141 colleges.

(c) 263 addresses were given to 53,000 students in 145 high schools.

(d) 21 study courses of from 10 days to six weeks each were conducted in cooperation with recognized educational institutions, 13 being for teachers (11 credit courses), 4 for parents, 3 for religious leaders and one for professional social hygiene workers. (In a number of summer schools enrollments in the social hygiene courses exceeded those of any other course.)

(e) 50 school superintendents cooperated in studying a social hygiene outline for Junior High Schools, the resulting outline having been printed for experimental use.

(f) 256 Parent-Teacher groups in 22 states were addressed, the total attendance being upward of 32,000. In further cooperation with the National Congress of Parents and Teachers, the Association participated in one national and 15 state conventions; supplied 36 exhibits to state and district conventions; aided state and local Parent-Teacher groups in developing their social hygiene programs through correspondence, conferences, and the provision of specially prepared programs and literature.

(g) In cooperation with the Federal Council of Churches the Association addressed 37 church groups in 43 talks with an attendance of 10,170; organized a number of study groups of parents and church leaders, using as text Galloway's "Parenthood and the Character Training of Children;" conducted courses and conferences in the summer school of the New Jersey Council of Religious Education; gave a series of lectures in the summer conference of the Southern Methodist Church; conducted a course of ten lectures for church leaders at the New York Chautauqua.

(h) A series of articles on social hygiene was furnished to religious publications and one issue of the Federation's Information Service was devoted to an exposition of the social hygiene program.

With the Medical Division

Who diagnoses and treats cases of syphilis and gonococcus infection? Studies carried on by the Association cooperating with the United States Public Health Service, state and city health departments, and the medical societies indicate that most cases are handled by the private physician, the clinic ranking next in volume of cases. The venereal disease charlatan has been largely eliminated but he and other unlicensed practitioners still exploit a large enough percentage of sufferers to make them a continuing handicap to medical progress. The Association has studied and reported on the activities of these exploiters in a series of articles which have been widely circulated and highly commended by professional leaders in public health and in private practice. Among these studies may be listed:

- (1) Cleveland Social Hygiene Survey.
- (2) East Harlem Social Hygiene Survey.
- (3) Holyoke Drug Store Survey.
- (4) New Haven Social Hygiene Survey.

Other important medical activities of the Association during 1928 include:

(a) A prevalence study of venereal diseases in the five boroughs of Greater New York in cooperation with the New York Tuberculosis and Health Association.

(b) A case study of venereal diseases among seamen in cooperation with the United States Public Health Service and the Welfare Council of New York City.

(c) Exhibits arranged for the annual meetings of the American Medical Association in Minneapolis, Minnesota; Virginia State Medical Society at Danville, Virginia, and the Southern Medical Association, Asheville, North Carolina.

(d) Field studies and conferences in 26 cities of 19 states.

(e) Revision of city health department appraisal forms in cooperation with American Public Health Association.

(f) Revision of motion pictures, "Modern Diagnosis and Treatment of Syphilis" and "The Public Health Twins at Work."

(g) Assembling of data for special program of work against congenital syphilis.

In the Field of Legal and Protective Measures

A glimpse at the Association's work in these fields shows:

(a) Studies of vice conditions were made in 24 cities of two states at the request of the state health departments. In addition, 44 investigations were made in 34 cities throughout the United States in cooperation with and on invitations from local committees or groups interested in legal and protective measures, and special investigations were made in California, Illinois, Louisiana, Pennsylvania, Rhode Island, Texas. At least one city in every state in the Union was visited in order that a comprehensive nation-wide picture of conditions might be obtained.

(b) In 1926 an intensive study of prostitution was carried on in Detroit. Subsequent to the completion of this, new laws were passed and special efforts by the police and courts were begun and have been consistently carried out to suppress commercialized prostitution. In order to evaluate the progress made, another study of commercialized prostitution conditions was made in 1928. This study showed a marked improvement in conditions. Two studies of venereal disease incidents were made in Detroit by the Association at the same time and in the same way and a preliminary tabulation indicates a tangible reduction in cases under treatment even though the proportion of doctors treating venereal disease has increased. In order to complete our official records of all data relating to sex offenses over a period of four years, a study of the records of the police department and the courts has been undertaken in the belief that information will be obtained which will answer once and for all the many questions raised by the proponents of a system of regulation of prostitution and the periodic medical examination of prostitutes.

(c) 22 addresses on legal and protective measures have been given before influential meetings in 11 states.

(d) Much time and effort were expended in preparing a digest of social hygiene laws of 54 nations for the Social Section of the League of Nations. This information was followed up by a visit of the Director of the Division to Geneva to attend the meetings of the Traffic in Women and Children Committee and the Child Welfare Committee of the League of Nations in March. The Director took part in the deliberations of both Committees. The digest of laws will eventually be published by the League of Nations.

(e) In cooperation with the Welfare Council of New York City an analysis has been made of over 1,600 questionnaires filled in by Brooklyn school girls in an effort to gather information regarding the home life and leisure-time activities of adolescent girls with special emphasis on the question of whether or not the home is breaking down.

Other Important Activities

In concluding this summary we shall list for you a number of further accomplishments, many of which have been called to your attention through the columns of the Journal of Social Hygiene or the Social Hygiene News:

- (1) The highly successful Regional Conferences in

Louisville and Chicago, in cooperation with the State Board of Health and the Social Hygiene Society of Kentucky, the Social Hygiene Council of Chicago, the American Public Health Association and other interested organizations.

(2) Administration of the program of the Committee on Research in Syphilis. (This Committee announced its securing of funds up to \$100,000 a year for five years.)

(3) Special advisory and field services for Indian medical and school authorities in cooperation with the United States Department of Interior, and continued effective cooperation with the United States Bureaus of Education and of Immigration.

(4) Promotion of nation-wide meetings in honor of the Josephine Butler Centenary.

(5) Strengthening of existing affiliated societies and the organization of new societies and committees in Virginia; Western Missouri; New Haven, Connecticut; Albany, Rochester and Syracuse, New York; Tulsa and Oklahoma City, Oklahoma; Philadelphia, Pennsylvania; and San Francisco, California.

(6) The sending out of special news bulletins, monthly or oftener, to our membership, and the sending of letters and material to special groups at the request of state health departments and other responsible agencies.

(7) The publication of new contributions (scientific and social-betterment discussion, book reviews, news notes) in the *Journal of Social Hygiene*.

(8) The completion and acceptance of our New Haven Survey Report and recommendations. (These recommendations are being put into effect by the City Health Department and the Social Hygiene Committee.)

(9) The continuance of work with racial groups, particularly the educational and public health efforts directed toward bettering conditions in the Negro population.

(10) The fine progress of social hygiene work carried on by such influential cooperating agencies as the National Congress of Parents and Teachers, Federal Council of Churches, Young Men's Christian Associations, Young Women's Christian Associations, General Federation of Women's Clubs, Women's Christian Temperance Union, Boy Scouts, Girl Scouts, National Council of Women, United Parent-Teacher Association, and National Council of Jewish Women.

(11) The continued valuable programs and exhibits arranged in cooperation with the American Medical Association, National Conference of Social Work, American Public Health Association, National Prison Association, and used, further, by state, county and local units of these organizations.

(12) The effective cooperation maintained with the Health and Child Welfare Section of the League of Nations, The British and the Canadian Social Hygiene Councils, the Union Internationale Contre le Peril Venerien, the International League of Red Cross Societies, and many other international and foreign agencies dealing with problems in the social hygiene field in Europe, Asia, Africa and South America.

We believe that this summary will assure you that measurable progress has been made on practically all of the points which were set down in the statement of our general program and budget for 1928 as adopted by the Board of Directors a year ago. Should you desire details regarding any portion of the Association's program, or on any of its late accomplishments, we shall welcome a letter from you.

RAY H. EVERETT,
Managing Editor.

370 Seventh Avenue, New York,

Correspondence

"Such a Capacity for Misunderstanding Amounts to Genius"

To the Editor of THE MEDICAL TIMES

I am grateful to you for printing my letter of June 5th but am greatly surprised at the note appended. Your editorial of June clearly attacks Puritanism. It was the topic in which the emphasis of my letter was directed.

After a careful search for what you call a "commendation" of the court's action in condemning Mrs. Dennett's pamphlet, I fail to find any word or evidence of commendation. Neither is there any condemnation of Mrs. Dennett's pamphlet.

You misrepresent Mrs. Dennett's pamphlet by saying that she denies sexual freedom to the young people whom she attempts to teach concerning sex matters and you condemn her for failing to teach that freedom. As a matter of fact she does teach that freedom and that is what the court condemned. How can your conscience or your reason permit such a mis-statement?

I am amazed that you should in your note omit all reference to Puritanism and attempt to say that your editorial either commended the court or condemned Mrs. Dennett's pamphlet.

Faithfully yours,

WM. SHEAFE CHASE.

Brooklyn, N. Y., July 2, 1929.

Filtered Ultraviolet in the Diagnosis of Ringworm Infestation of Hairs

Since publication of my work on fluorescence, particularly in dermatology, I have received numerous requests from colleagues in this country to give some details of this easy and, apparently, unailing method of detecting the presence of fungi in the hairs of the scalp.

The method is not new. There are a few references to it in foreign medical journals. The requirements are: (1) a source of ultraviolet emanation which gives a limited infrared emanation. The therapeutic mercury vapor arc in quartz, both air- and water-cooled, or the conventional carbon flame arc may be utilized, provided some means are available to disseminate the heat of the latter apparatus, so that the ray filter will not be cracked; (2) a filter which has the characteristic that it permits the passage of the invisible ultraviolet radiations, but prevents the passage of the visible radiations. Two such filters are available in this country: One is the nickel filter of Wood, which permits the passage of the ultraviolet about the line 3660 Angstrom units; the second is the recently manufactured Correx red or blue-purple glass. This permits the passage of varying percentages of ultraviolet, from about 4000 to 2400 A.u., and includes about 10 per cent of the visible violet. Most of my work has been done with this Correx filter and the mercury vapor arc in quartz apparatus.

In the examination of suspected heads of hair for tinea, one sets up the apparatus and permits it to operate to full intensity. The child is then taken to the dark room and the areas of suspected hair infestation are brought close to the window of the filtered radiation. If the hairs are infested, one sees each hair clearly, as a yellowish green filament. This color is very shiny and is not easily mistaken. So far as I know, it is not possible to confuse this fluorescence of hair infestation seen in tinea with anything else. Certainly no possible application to the hairs, in efforts to treat the affection, can cause any fluorescence which simulates this yellowish-green appearance.

Dr. Graham, who has been on duty in the laboratory at the New York Skin and Cancer Hospital, where I have a filtered ultraviolet diagnostic lamp, reminds me that, in a number of cases which were not at first diagnosed microscopically, examination under the lamp disclosed fluorescing hairs which showed spores and mycelia under the microscope.

Search for the tinea in suspected cases of ringworm of the scalp is thus facilitated. Where a large number of suspects must be examined, the method is very helpful.

Tinea circinata of the non-hairy skin has been examined under the filtered ultraviolet rays and has been noted to evidence a similar yellowish fluorescence, limited to very small areas of the affected skin. The examination of lesions of tinea versicolor disclose a glow of dull golden-yellow.

No fluorescence indicative of such fungus infestation has been seen on examination of lesions of pityriasis rosea, and this may be a hint that such lesions are not due to fungi. On the other hand, I have not seen similar fluorescence in clinical cases of tinea marginatum (epidermophytosis of the toes and soles) and intertrigo. Cultures of fungi of various types are being examined under fluorescence, and such diagnostic hints as should be helpful will be published later.—HERMAN GOODMAN, M.D., In *Clinical Medicine and Surgery*.

Public Health

THE COST OF BEING ILL TO BE SURVEYED FOR ALL

Social Aspects of the Revolution in Medicine and Care of the Sick Will Be the Subject of an Exhaustive Study Over the Nation

By RAY LYMAN WILBUR

A five-year study of the cost of medical care and the means available for bringing adequate scientific medical care to people in all parts of the country and of all stations in life has been undertaken by a large committee representative of the many interests involved. Dr. Ray Lyman Wilbur, himself a doctor of medicine and President of Stanford University, is Chairman of this important committee. In the article below Dr. Wilbur outlines the scope of the survey and tells how it proposes to deal with its complicated problems.

In the last fifty years there has been more actual advance in medicine as a science than in the 2,000 years preceding. Discovery has followed discovery, as all of the laboratory sciences have been brought into the service of the care of the sick. Just as the laboratory and its output of information and trained men has changed the industrial life of our nation so has it changed that of medicine. In fact, these changes have been so rapid that only in the established centers, where there is concentration of wealth, patients and physicians, has it been possible to give a patient all the benefits of modern medicine. The old days of the doctor and his saddle-bags or the doctor and his buggy have gone by.

While in a large percentage of human ailments the well-trained physician can examine his patients with his own hands and sense organs and a few instruments, it is true that the care of those who are ill beyond the preliminary examination demands a whole series of intricate processes. The training of the physician for this has become expensive of money and time. Besides he has to use all of the modern improvements of transportation and communication, as well as hospitals, trained nurses and other attendants in his care of the patient.

MEDICINE'S PROGRESS

Preventive medicine has changed the character of illness, but it has not decreased the call upon the physician. It is obvious enough that if a child does not succumb to scarlet fever he is apt to live long enough eventually to require more in the way of medical service. There have been certain striking changes in medical education with a decrease in the number of students in medical schools and at the same time an increase in population, but through preventive medicine and the increase in the facilities and lieutenants of the doctor there seems to be about the same opportunity for the service of the individual medical practitioner as has existed over many years.

With the change in social and economic standards and the enlarged setting for medicine there is a steady growing difficulty in providing adequate care for a large proportion of the population of the United States at a cost which they can meet. At the same time the majority of physicians fail to receive compensation in keeping with the time and expense of their training and the type of life which they must lead. The career of the nurse viewed over a period of years is a precarious one. Few dentists get rich and most hospitals are in part supported by endowment or Government funds. It is becoming increasingly evident that something must be done to devise financial plans for the provision of adequate medical service to all elements of the population.

The Committee on the Cost of Medical Care has been set up with funds given by the Carnegie Corporation, the Millbank Memorial Fund, the Russell Sage Foundation and the Twentieth Century Fund. It has also received assistance from the American Medical Association and the Metropolitan Life Insurance Company. The committee includes representatives of private practice, public health institutions and organizations, and the public. It enters upon its five-year program of study without preconceptions as to solutions of the problem. It is conscious of the efforts made in various European countries in this field, but hopes by careful study of conditions as they present themselves in the United States to offer some American solutions worthy of trial.

FIRST STEP IN STUDY

Before any conclusions can be reached a large amount of data must be obtained. While opinions are expressed on every side, actual facts are largely wanting. A single personal experience, particularly if it has been unfortunate in some regard, is apt to develop prejudiced thinking. It is fortunate that at the present time certain similar studies are going forward which will help to solve the problems. A group of educators, under the Chair-

manship of President A. Lawrence Lowell of Harvard University and known as the Commission on Medical Education, is carrying on a study of medical education. It has received funds from the Rockefeller Foundation, the Carnegie Corporation, the American Medical Association, and practically all of the medical schools in the country. A similar study is under way in connection with the training of nurses, and the first report is already available. There has been a recent survey made by the Carnegie Foundation of dental education.

A few salient points about hospitals will give an idea of the scope and difficulties which the Committee on the Cost of Medical Care must meet.

The number of hospitals has increased in fifty years from 149 to over 7,000, and hospital beds from 35,000 to over 80,000, a percentage of increase of over 2,000 as compared to 175 per cent. increase in population. The building of modern hospitals depends upon the work of Pasteur. The knowledge which he brought us of living organisms as the causes of many diseases has made possible the moderate operating room and the safe housing together of individuals with all sorts of injuries and diseases. The hospital has become the place of choice for obstetrical cases and for the majority of illnesses instead of a mere refuge for the helpless and indigent sick.

Changes in domestic service have made the trained nurse in the home an increasingly difficult problem so that the hospital is becoming more and more a center for the nurse acting as the lieutenant of the doctor. In the hospital, too, can most readily be provided those laboratory services and the experts who can assist the doctor by the use of the X-ray, the study of tissues and the discharges of the body, as well as for physical therapeutics and the specialized methods of treatment. The hospital is a mechanism that simplifies the care of the sick and saves the time of the patient and the doctor.

There is a capital investment of approximately \$5,000,000,000 in hospitals in America. The average occupancy rate in a hospital is 60 per cent. Over half a million attendants are required for these patients, including doctors, nurses, orderlies, maids and others. Roughly we can see that in the hospitals of the country there are as patients and caretakers more than 1,000,000 people at all times. Since the hospital is increasing its social functions all of the time and is becoming more and more of a centre for the care of the sick, every detail of its management becomes of immediate moment.

HOSPITAL COST

Much of the expense of illness is now grouped in and about the hospital. It is true that it may be cheaper to go to a hospital and have the rental of a room, meals and the care of a nurse than to pay for a room alone in a first-class city hotel. But the costs are there and when the accessory services are added to the doctor's bill the expense begins to grow and if special nurses are required the necessary expense mounts more rapidly, since the nurse has to be cared for by the hospital during the period of her care of the patient.

With the telephone, the automobile and the good roads it is inevitable that the hospital will grow in its importance in the physical examination of those who are apparently well, as well as in the actual care of the sick. The doctor's office is becoming of less consequence as a center for the care of the sick than the hospital itself. This makes it imperative for a most careful hospital study to be made. It also requires the development of a policy which can be accepted by the public.

Should the hospital be an income-producing institution or should the cost for its construction be primarily a charge upon the Government or upon the free-giver? The mechanization of the environment of the doctor will compel an answer to this question. This mechanization is not only in the hospitals but in the office buildings taking care of physicians. The ordinary city physician must make several thousand dollars to pay his rental, automobile expense, nursing expense, telephone, gas, heat and light before he has anything for himself and his family.

A few items will indicate the scope of studies to be undertaken by the committee on cost of medical care. It is estimated that almost 1,000,000 of the children and young people of the United States now attending schools and colleges will enter hospitals for mental diseases some time in their lives if the present rates for first admission continue. This means an enormous population in our insane asylums within a generation. We need not only to know the facts regarding the prevalence of these conditions, but to study all of their causes and particularly their first symptoms to see what can be accomplished to lessen the burden or to meet it more satisfactorily.

Malaria and its relationship to local diseases and economic inefficiency have been a potent factor in the development of America. A study of a thousand cases of malaria may be made in order to determine just what is actually being done in the way of preventive and curative measures and what can be done. It is estimated that there are several hundred thousand diabetics in the United States. It is important to determine a more exact

figure in order to calculate the charge upon our national wealth and our energy in their proper care.

The examinations made at the time of the World War showed a high defect rate among many of our youth. In certain areas this seemed to be more marked than in others. All of these facts and many others of similar import must be brought together so that the size of the problem may be understood.

A PICTURE OF THE WHOLE

It is necessary to survey statistically the existing facilities for the management of illness in order to get a clear picture of the amount of money involved, the needs of the future and so forth. There are striking differences between medical service in the country and in the city. The distribution of physicians in the country and the gradual disappearance of the family physician have attracted a good deal of attention. Much personal experience has shown that the cost of individual illnesses, both from the standpoint of hospital charges and doctor fees, has been unduly burdensome in many individual instances. We know, too, that a large proportion of the time of many physicians is spent in fee service, and that there are many free beds in hospitals. No one knows just what it costs the doctor to make a call. We know that the same rules must apply in medicine as in the delivery of milk. If individual dairies send their drivers in all directions throughout a city, crossing one another's path frequently, there is an abnormal delivery expense.

There are certain outstanding experiments being made in industry through the development of hospital and other clinical services paid for by small fees from the individual or the corporation involved. Some of the universities have developed elaborate services for maintaining the health of their students. The group clinic is being used in various parts of the country. Certain pay clinics, as that of the Cornell Medical School, have been established.

DIFFICULTIES TO BE FACED

There has been a number of organizations created which extend in ever-widening circles over the field of medical practice. The result has been uneasiness on the part of the medical profession and dissatisfaction on the part of a considerable proportion of the public. The great question before the Committee on the Cost of Medical Care is whether a certain amount of order can be brought out of this comparative chaos. American business has found it possible to concentrate, centralize, standardize and economize. This series of processes does not fit well into a profession where the intimate personal relations of two individuals, the doctor and the patient, are the essential starting points for successful treatment of the sick in the majority of instances. The psychology of the patient plays a large part in his reactions, comfort and in the development of that confidence upon which much healing rests.

The committee faces many difficulties in its five-year study. There is a marked confusion in the minds of the public as well as in that of the medical profession as to just what the situation is and what should be done. The changes have been too rapid for either the public or the medical profession to follow, but there has been no change in the need of the individual patient for the service of the individual doctor. Medical practice has not been organized on that modern basis which has developed so rapidly in merchandising and in industry and in other forms of public service.

THE NEED TO ORGANIZE

The question is, can it be so organized? Engineers and lawyers are being grouped about great corporations and great firms. Some doctors are taking part in the same sort of grouping. The physician with his long tradition of service for any one who knocks at the door is finding it difficult to give that service and to survive economically. The family may find a single illness a handicap for years. We hope that by bringing out the facts that are yet unknown, by studying the peculiar conditions existing in America, it will be possible to begin experiments at least in some portions of the country or in some States by which reasonable solutions can be discovered. Certainly great changes are bound to come. It is the hope of the Committee on the Cost of Medical Care that these changes can be made upon the basis of fact and established experience rather than upon mere guesses, legislative fiat, or the imitation of European procedures.—*N. Y. Times*.

Rockefeller Foundation Activities

During 1928, in disbursing from income and capital \$21,690,738, the Rockefeller Foundation engaged in the following activities: (1) contributed to the development of medical sciences through provision of funds for land, building, operation, or endowment for eighteen medical schools in fourteen countries; (2) provided for the support of the Peking Union Medical College; (3) made minor appropriations for improving premedical instruction in China and Siam, for operating expenses of seventeen hospitals in China, and for laboratory supplies, equipment, and literature for European

medical centers which are still feeling the after-effects of the war; (4) through small grants assisted certain departments of medical schools in France, Italy, and Ireland which offer exceptional facilities for graduate study; (5) continued to contribute towards the advancement of the biological sciences in institutions in four countries; (6) assisted the development of professional public health training in eight schools and institutes in seven countries and in twelve field training stations in the United States and abroad; (7) gave aid to fifteen nurse training schools in ten countries; (8) helped Brazil to combat a new outbreak of yellow fever; (9) continued studies of that disease on the West Coast of Africa; (10) took part in malaria control demonstrations or surveys in six of the American states and in eighteen foreign countries; (11) continued contributions towards the emergency budgets of eighty-five county health organizations in seven states of the Mississippi flood area; (12) aided the governments of twenty-one countries in fighting hookworm disease; (13) gave funds to organized rural health services in 191 counties in the United States and toward state supervision of such services in fourteen states in that country, and aided in local health work in twenty-three foreign countries; (14) assisted in the establishment or maintenance of certain essential divisions in the national health services of twenty-three foreign countries and in the state health departments of nineteen American states; (15) provided, directly or indirectly, fellowships for 802 men and women from forty-six different countries, paid the traveling expenses of sixty-one officials or professors making study visits in the United States or abroad and provided similar opportunities for 127 nurses and other public health workers; (16) contributed to the work of the Health Organization of the League of Nations through the support of international interchanges of public health personnel and the development of a world-wide service of epidemiological intelligence and public health statistics; (17) lent staff members as consultants to many foreign governments; (18) made surveys of health conditions or of medical or nursing education in five countries; (19) collaborated with the Rockefeller Institute in field studies of respiratory diseases and verruga peruana; (20) assisted in mental hygiene projects in the United States and Canada, in demonstrations in dispensary development, research, and teaching in hospitals and clinics in New York City, and in numerous other undertakings in public health, medical education, and allied fields.

Survey of Mineral Waters Finds Good Conditions

In order to give the consumer of bottled waters a clean and properly labeled product, officials of the Food, Drug and Insecticide Administration of the United States Department of Agriculture have made a nation-wide survey of mineral waters, their labels, springs and bottling plants.

Satisfactory conditions were reported for the majority of waters and springs inspected. Modern bottling equipment and sanitary practices have greatly improved the purity of mineral waters and artificial mineral waters.

It is still occasionally necessary for the administration to seize consignments of waters shown to be polluted. In these cases, sanitary inspections of the springs usually disclose that the contamination is the result of inadequate protection of the springs from overflow or seepage of polluted surface waters, inefficient or out-of-date bottling equipment, or personnel ignorant of modern sanitary requirements.

According to the Federal food and drugs act, mineral waters and artificial mineral waters may be labeled and sold as purgatives, laxatives or antacids, provided they are such, but not as obesity "cures" or cures for any disease or group of diseases. The physiological action of the vast majority of mineral waters is due to ingredients which cause the waters to act as purgatives, laxatives or antacids.

All curative claims for alleged radioactive and so-called lithia waters are to be discounted, the officials say. In the majority of cases investigated, radioactive properties and lithia content were so slight that one hundred gallons or more a day would be needed to give the consumer any direct therapeutic effect.

For the past few years, the Food, Drug and Insecticide Administration has cooperated with spring owners to make it possible for them to place high quality waters on the market, correctly labeled and free from contamination. The assistance has consisted largely in pointing out possible sources of spring pollution and advising the adoption of modern bottling practices and equipment.

In addition to carefully guarding the branding and purity of waters shipped interstate, the Administration maintains a strict surveillance over large quantities of mineral waters imported from France, Spain, England, Austria, Italy, Japan and other countries.

Some Interesting Suicide Figures

In his customary annual survey of the deaths reported from suicide in the United States, Hoffman calls attention to the fact that the figures for last year reached the highest total recorded since 1920. In that year the rate for 100 cities was 12.3 per 100,000 of population, while for 96 cities the corresponding rate was 17.5 for 1928. In his article in *THE SPECTATOR*, Hoffmann says that "the increase in rate is difficult to understand in view of the generally favorable industrial and business conditions of the present period. But what is true of the country in general is not necessarily true of certain sections, or particular elements of the population, which may be injuriously affected by industrial or financial depressions. The social and economic conditions of the nation are now so extremely complex that no single item, favorable or unfavorable, is likely to be seriously reflected in general averages unless conditions in this respect become very pronounced. But it is easy to draw false conclusions from the prevailing prosperity which after all may be much more apparent than real in countless individual cases in which the struggle for existence falls with crushing weight upon persons unable to cope with circumstances beyond their control. There are reasons for believing that in many respects present day life is thoroughly unwholesome in large sections of the population which find it difficult to maintain a standard of life presupposing incessant anxiety and toil."

Our immediate interest in Hoffman's figures is in the marked difference in the rate for the Boroughs of Manhattan and Bronx (old City of New York) and that of the Borough of Brooklyn. It will be noted that the old City of New York has the highest rate of the large cities in this country, though considerably higher rates are recorded for ten other cities. In passing, it may be remarked that six of these ten cities are on the Pacific Coast.

SUICIDES IN LARGE AMERICAN CITIES—1928

	Population	Suicides	Rate
Manhattan and Bronx	2,703,900	700	25.9
St. Louis	848,100	197	23.2
New York—entire city	6,017,700	1182	19.6
Los Angeles	1,500,000	285	19.0
Chicago	3,157,000	572	18.1
Detroit	1,387,900	226	16.4
Baltimore	830,400	128	15.4
Philadelphia	2,064,200	304	14.7
Borough of Brooklyn	2,308,500	327	14.2
Boston	799,200	113	14.1

—Weekly Bulletin, Dep't of Health,
City of New York.

Yellow Fever

The small yellow-fever epidemic which appeared in Rio de Janeiro toward the end of May, following the scattered outbreaks which appeared in Africa, from 1926 to 1928, in Senegal, the Gold Coast, Nigeria, and the Belgian Congo, has confirmed the law that an epidemic revival of a disease in one region is followed by outbreaks of the disease in other parts of the world. Reports sent to the office show that the focus of Rio de Janeiro has no relation to the foci of Africa, but is rather connected with an endemic center of yellow fever, in the form of abortive cases, in the northern part of Brazil. The epidemic rapidly attained its maximum intensity in June; it declined regularly until the middle of August; a few isolated cases occurred later, bringing the total to 116 by the middle of October. The destruction of mosquito carriers and mosquito breeding places has been strenuously carried on; the percentage of houses having breeding places has been lowered in eleven weeks from 14 to 2.25 per 100. The disease attacked especially recent arrivals (Portuguese), although the population of Rio could not have benefited by any acquired immunity, as the disease had not appeared in the city for twenty-three years. Studies immediately undertaken at Rio proved that yellow fever can easily be inoculated in monkeys other than the *Macacus rhesus*, notably the *M. cynomolgus* and *M. spectosus*; that the blood of patients is virulent up to about the seventy-second hour, and perhaps longer in the light forms than in the severe forms; that the American virus is identical with the African; that mosquitoes infected by biting and inoculated subcutaneously in the monkey give it the disease from the first days of their infection, while the bite of the mosquito is not infective until nine days at least. Vaccines have been prepared by different methods, among which is that of Hindle, with an emulsion of the liver of infected monkeys, and already used in several instances.—*Public Health Reports*, March 1929.

Ephedrine in Ophthalmology

According to Orr (*The Practitioner*, April, 1929), ephedrine in a 1 or 2 per cent solution is the most suitable drug for ophthalmoscopic examinations in routine practice.

Contemporary Progress

A Study of the Depressor Action of Platelet Extract and Its Possible Relationship to the Etiology of Surgical Shock

Horace Greeley, Jr., M. D., Fellow in Surgery, The Mayo Foundation: It has long been known that tissue extracts, when injected intravenously, lower blood pressure. Even fifty years ago it was suspected that defibrinated blood likewise possessed certain poisonous properties, which however did not render it entirely unsuitable for transfusion. Many workers have shown that both defibrinated blood and the serum of clotted blood possess marked ability to cause constriction of an excised strip of artery. Herrick and Markowitz have shown strikingly the poisonous properties of defibrinated blood, using the perfused heart as a test object. They have shown that whereas the heart of a rabbit perfused with Ringer-Locke solution would beat normally for eight to ten hours, the addition of defibrinated blood to the perfusing fluid, instead of improving the condition of the heart, was so markedly poisonous as to cause it to cease functioning after an hour or two. Because of its possible relationship to the reactions from blood transfusion and to altered conditions of the blood in various pathologic conditions, I undertook the problem of attempting to determine the mechanism of this poisonous action.

The effect of defibrinated blood on blood pressure was first investigated. The removal of 70 c.c. of blood from an anesthetized dog was accompanied by the usual decrease in blood pressure. This blood was whipped to remove the fibrin and was strained through gauze. Its reinjection produced a further fall in blood pressure. I wish to point out that the injection of defibrinated blood may be accompanied by two possible effects: first, a fall in the blood pressure due to some poisonous principle and second, a rise in the blood pressure due to the increased volume of the circulating fluid. This latter effect is usually slight and transitory and is more likely to be the dominant one when the volume is already low or after repeated injections of defibrinated blood. Next, the effect of defibrinated blood on smooth muscle was studied. In dilutions of 1:50, defibrinated blood invariably provokes contraction of a strip of smooth muscle. When added to the perfusing fluid in which is suspended a piece of intestine, artery or uterus there is marked contraction. Histamine likewise exerts this effect on the intestine of the rabbit but not on that of the rat.

Thus we have two test mediums with which to determine this poisonous property; namely, smooth muscle and the circulating apparatus, particularly that activity of it which is reflected in blood pressure. For the former, the intestine of the rat was used, as it was found to be sensitive and readily available. For the latter both dogs and rabbits were used. Extracts of platelets, of erythrocytes and leukocytes were used in an attempt to find wherein resides the poisonous property of defibrinated blood.

For the preparation of platelets oxalated or citrated blood was centrifugalized at a slow speed to remove the cells; the supernatant plasma was centrifugalized at a much higher speed to remove the lighter platelets. Extracts were made by treating the platelets with distilled water, recalcifying them with calcium chloride and finally rendering the solution isotonic with sodium chloride. Extracts of erythrocytes were prepared in the same way from the sedimented cells. Leukocytes were obtained by inducing a nonbacterial abscess in the chest of a dog by the injection of a sterile suspension of aleuronat; an extract of leukocytes was prepared in the same way as that in which extracts of platelets and of erythrocytes was made.

I obtained marked contractions of the intestine of the rat with extraordinarily small amounts of platelet extract. Extracts of erythrocytes and of leukocytes manifested no such action. When extracts of platelets were injected intravenously into a rabbit or a dog, a fall in the blood pressure of greater or lesser magnitude invariably was produced. Extracts of erythrocytes and of leukocytes seemed to exert a slightly hypertensive action. The magnitude of the drop in blood pressure seems to depend on circumstances with which I am not entirely acquainted. In some cases there was a sudden drop in the pressure which was succeeded by death; in others there was a drop to a "shock level" followed by a very gradual rise or by continuance of blood pressure at shock level, and in still others there was a quick drop succeeded by a fairly quick return to the normal level or to a level a little lower than normal. In a general way, these results seem dependent on the quantity used although there are variations from this rule. Allowing for the losses incident to the preparation of platelets as determined by repeated counts, the death of a rabbit which weighed 2.2 kg. has been brought about by the injection of a platelet extract made from what corresponded to 250 c.c. of blood.

That the depressor action of platelets is not the result of thrombosis was evident from the fact that the depression of blood pressure occurred in many cases in which thrombi were not demonstrable at necropsy. Moreover platelet extract had an even more marked effect on the blood pressure of a dog, the blood of which has been completely defibrinated by the withdrawal, successively, of large quantities of blood, whipping it to remove the fibrin, and reinjecting it. The injection of platelet extract into this dog caused lowering of his blood pressure to less than half, at which level it remained, with only a slight attempt at recovery in more than an hour. In many experiments the blood of the experimental animal was rendered incoagulable by the injection of heparin. The administration of platelet extract had the usual effect also in these animals.

In view of the fact that the pulse rate was not slowed following injection, it is unlikely that the results observed were due to the presence of choline. That histamine is not the active principle is clear for two reasons: histamine does not cause contraction of the smooth muscle of the intestine of the rat, and histamine produces a rise in the blood pressure of the anesthetized rabbit. Both of these effects of histamine are contrary to the effects of platelet extract.

As to the mechanism of this fall in blood pressure, my experiments indicate that it is peripheral in nature. The application of a plethysmograph to the kidney of a dog anesthetized with ether indicates that the fall in blood pressure is accompanied by renal shrinkage. This effect is seen also in the spleen, whereas the effect on the hind limb is one of expansion. The depressor action of platelet extract is in this respect comparable with that of rattlesnake venom and of histamine.

A consideration of these actions of the platelet inevitably raises the question as to the part it may have in traumatic shock. I believe it to be highly probable that the destruction of platelets is responsible for certain reactions following transfusion of blood but that it is responsible for certain varieties of traumatic shock is a much more difficult thesis to defend. During traumatization of tissue the blood that is passing through is very likely to be changed and this is especially true of the platelet, which is very labile. Thus there is nothing improbable in the hypothesis. However, more rigid controls are needed before doing more than opening the question. Whatever may be the ultimate conclusions regarding the cause of shock, the experiments reported indicate that platelets, on intravenous injection, possess a sufficiently marked depressor action to make them seriously suspected of having a share in producing one of the phenomena of shock.

CONCLUSIONS

1. There is present in defibrinated blood a poison which causes constriction of smooth muscle and which produces a fall in blood pressure on intravenous administration. This action seems to be largely, if not entirely, dependent on the disintegration of the platelets and is not produced either by erythrocytes or by leukocytes.
2. This toxin is liberated by the breakdown of platelets from the blood of horses, rabbits and dogs. Quantities of the toxin sufficient to cause reduction of the blood pressure to a level of less than half the normal, or even to kill the animal, are liberated by the destruction of platelets in numbers that the animal itself could provide.
3. The action of this poison appears to be peripheral and it is suggested that perhaps, along with vasoconstriction of the arteries, there may be vasodilation of the capillaries.
4. Since surgical shock follows accidents and operations wherein there has been extensive traumatization of the blood, it is suggested that the disintegration of the relatively labile platelets may be a factor in the production of shock.—*Proceedings of the Mayo Clinic*, May 29, 1929.

The Causation of Whooping-Cough

L. W. Sauer and L. Hambrecht publish a study of the etiology of whooping-cough, having carried out a series of experiments in producing whooping-cough in twenty-eight apparently healthy monkeys by thirty-two strains of Bordet-Gengou bacilli obtained from cases of whooping-cough. The animals had been kept under preliminary observation for a week or longer, to ensure a good state of health. After a period of incubation of from one to three weeks, spontaneous paroxysmal coughs followed the injection of the bacilli into the larynx of five of the monkeys, and similar coughs followed inoculation into the noses of three of the monkeys. The bacillus was recovered from deep throat cultures, and also from the larynx, trachea, and lungs after death. The bacillus was recovered during the height of the cough from an animal that had been inoculated with the bacillus recovered, in turn, from the lung of another coughing animal. These experiments would seem to prove the responsibility of *B. pertussis* (Bordet-Gengou) for the causation of whooping-cough.—(*American Journal of Diseases of Children*, April, 1929, p. 732.)

Convention for the Revision of U. S. P. Meets May 13, 1930

In compliance with the provisions of the Constitution and By-Laws of the United States Pharmacopoeial Convention, the President of the Convention, Dr. Reid Hunt, invites the several bodies, entitled under the Constitution to representation therein, to appoint delegates to the Eleventh Decennial Convention to meet in Washington, D. C., on May 13, 1930.

"The members of the United States Pharmacopoeial Convention, in addition to the Incorporators and their associates, shall be delegates elected by the following organizations in the manner they shall respectively provide: Incorporated Medical Colleges, and Medical Schools connected with Incorporated Colleges and Universities; Incorporated Colleges of Pharmacy, and Pharmaceutical Schools connected with Incorporated Universities; Incorporated State Medical Associations; Incorporated State Pharmaceutical Associations; the American Medical Association, the American Pharmaceutical Association, The American Chemical Society, the National Association of Retail Druggists, and the National Association of Boards of Pharmacy."

Section 2 of the Constitution provides: "Delegates appointed by the Surgeon-General of the United States Army, the Surgeon-General of the United States Navy, and the Surgeon-General of the United States Public Health Service, the Secretary of Agriculture, the Secretary of Commerce, the Association of Official Agriculture Chemists, the Association of American Dairy, Food and Drug Officials, the National Wholesale Druggists' Association, the National Dental Association, the American Drug Manufacturers' Association, the United States Division of Customs, and the University of Havana, and by the organizations not heretofore named which were admitted to representation in the Convention of 1900, shall also be members of the corporation. Each body and each branch of the United States Government above mentioned shall be entitled to send three delegates to the meetings of this corporation. But no such delegates as are provided for in this article shall be members until their credentials shall have been examined and acted upon as provided for by the By-Laws. Delegates admitted as members at any decennial meeting shall continue to be members of the United States Pharmacopoeial Convention until their successors shall have been appointed and admitted as delegates to the ensuing Convention and no longer."

The Evolution of Pædiatrics

Of the many factors which have modified the scope and the activities of the general physician in the present century, one of the most potent has been the evolution of pædiatrics as a specialty. Those who were privileged to hear Dr. F. J. Poynton's presidential address on May 24th to the Section of Disease in Children at the Royal Society of Medicine were given an interesting survey of this process in the past, together with some shrewd deductions about its effect upon the future. Taking as his subject *Some Phases in English Pædiatrics as Viewed by a General Physician*, Dr. Poynton did not approach it in the spirit of a mere laudator temporis acti, but extended to those who follow him an appreciation no less generous than his tributes to the teachers from whom he acquired his art. He depicted the contrast between the work of the physician at the close of the last century and at the present day, both in respect of the material at his disposal and the problems which it presented to him. In former times opportunities for clinical observation were exceptionally great; a vast amount of material was available; epidemic diseases were the cause of an enormous mortality, and the nature of many common children's diseases was as yet unrevealed. The physician of this time could thus acquire a broad outlook on disease, and get an idea of the value of detailed observation. His knowledge and methods were individual; hence it is not surprising that some of the greatest teachers of clinical medicine belonged to this period. Their discoveries were the result of wide experience, combined with that power of careful observation and criticism which belongs to the highest order of intelligence. Cheadle's recognition, in 1878, of the identity of infantile scurvy with the adult form, which he had observed during protracted journeys in Canada, was an instance both of the opportunities and the achievements of his time. Nowadays, a large amount of clinical material has been removed as a result of advances in treatment and prophylaxis, while the process of specialization has made it impossible for the physician to carry out more than a portion of the necessary investigations. The sciences of bacteriology and biochemistry, having new ground to break, have made comparatively greater advances, and a tendency has arisen to regard "research" as belonging more properly to the laboratory than to the bedside. The physician has to some extent been driven to shift his ground, and become a collector of uncommon cases rather than an investigator of those which are of greater importance to the community.

While he recognizes that specialization is bound to increase, and that methods of investigation and research must reach a complexity which will place them still further beyond the attainments of any individual, Dr. Poynton maintains his faith in the continued utility and fruitfulness of clinical observation, and supports its claim for recognition as an important element of research. The interaction of the organs of the body will always make it imperative that the body should be studied as a whole; if the greater number of physicians become increasingly absorbed in pursuing special lines, it may come to pass that the real "specialist" of the future will be the physician who has knowledge of general disease.

In considering the changing position of the paediatrist who is a member of an honorary hospital staff, Dr. Poynton discussed with great acumen the problems which arise from his relation with the public services, such as the municipal clinics and the Ministry of Health. Children, more than any other section of the community, are a concern of the public services, and already there are signs of some difficulty in apportioning the exact functions of the clinics under the direction of the local authorities and of the children's hospitals. Theoretically, the one may be intended for the supervision of normal children, and the other for the treatment of sick ones, but in practice the distinction is not easily drawn. From the point of view of the public, there is much to be gained from the development of these services, and the pressure of public opinion will compel the Ministry of Health to extend its activities. In combating chronic diseases such as rheumatism, in which the child must be under observation and periodic treatment for a number of years, Dr. Poynton thinks that collaboration between the hospitals and the public authorities should be particularly fruitful; yet there is always danger of diminished efficiency resulting from lack of continuity in the methods of treatment adopted. The medical advisers of the public services will provide a highly organized machine for prevention and treatment of disease, but medical teaching, he said, is not a natural product of organization, and must be provided by a body such as the children's hospital, maintaining its independence but ready to collaborate and advise. An important part in the maintenance of unity and co-operation between these two groups of paediatrists might be played by the Section to whom this address was delivered, which includes representatives of public services and of hospital staffs, but is independent of both.—*The Lancet*, June 1, 1929.

The London Rheumatism Clinic

The proposed Clinic for the treatment of rheumatic diseases in London has made good progress and is now likely to be open in the coming autumn. All the money has been collected and building is in full swing in Regent's Park Square East where the Clinic is to provide a working unit of sufficient size to treat a normal average of 400 cases a day. There is no need to set out here what the raw material of this Clinic is to consist of. Both the captains of industry as well as those who represent the interests of the workers are at last conscious of the extent to which rheumatic disease is proving a blight on industry and an intolerable burden on the benefit funds of approved societies. We have in this country given an international lead on the incidence of rheumatic disease and in the search for its origin and causation, but although we have admirable hospitals at our spas and watering-places which can deal with at least 5000 bed-patients annually, there is no clearing-house in the industrial areas to sort out those who need in-patient treatment, no proper clinic for out-patient treatment of those in the early stages of disease who can remain at home, and no place where those who have had the benefit of institutional treatment can receive the continued observation and after-care which will alone ensure results. The London Rheumatism Clinic will be the first example of this type of institution, the first link in the chain of a complete rheumatic service, which has for its further development the arthritis unit and the spa hospital. The physical treatment clinic is not only the first but the most important of the three, for here we have only to regard the position in Holland where there are no spas and where, none the less, multitudes of early cases of rheumatic disability are completely cured in the local clinic at Amsterdam. To the British Committee on Rheumatism is due the inception of this Red Cross Clinic, and the Committee is unanimous in believing that physical treatment, properly given in conjunction with other special methods, is the best prescription for early and chronic rheumatic disorder. Arrangements will be made in the Clinic for treatment by means of at least four groups of physical agents including (1) heat and movement in baths, and local application of water vapor and hot air; (2) manipulation massage and exercises, alone or in combination with heat, by the hand or by douches or whirling water; (3) radiation in the form of heat, light, and ultra-violet rays; (4) electricity in the form of constant, interrupted, and high-frequency current. It is expected that the majority of patients will re-

quire a course of four to six weeks comprising ten to fifteen attendances which will enable some 12,000 individuals to pass through the Clinic in the course of the year. Those who are able and willing to pay a reasonable fee for treatment will do so and there is every prospect that the industrial assurance societies, all of whom have co-operated, will contribute. In this way the Clinic itself should be self-supporting or something like it.

Last week the important step was taken of appointing a consulting staff of honorary physicians to attend the Clinic in an honorary capacity; various directors and experts in special forms of treatment are to be appointed later. The decision to staff the Clinic on the lines of a general hospital differs from continental practice in such matters, as may be seen from the appendix to the concluding article on Modern Physical Treatment in Relation to Rheumatism which we publish on another page of this issue. The Amsterdam Institute, for instance, is in charge of a director who is responsible for both the administrative and the clinical sides, and in general this may be said to be the practice of all such special clinics on the Continent or in America. Our own experience of the voluntary hospital system is a peculiarly happy one; its beneficent spirit is much to be desired at such a clinic, and we hope that a combination of this spirit with that of the continental clinic will be workable. The question of a director, in accordance with the Continental pattern, will be a matter for later consideration. Dr. Glover's Report to the Ministry of Health (A Report on Chronic Arthritis. Ministry of Health Reports on Public Health and Medical Subjects, No. 52) admitted general agreement on the fact that physical treatment is more successful when a combination of methods is employed and that variation of treatment is often desirable. It would hardly be within the physical compass of a part-time consulting staff to effect such an intimate liaison that this combination of methods would be open to each individual patient without expert direction by a whole-time resident. It is not, as a recent correspondent imagined, as though balneology requires no skilled and qualified operators. Experience in the action and uses of baths is hard to come by, and at the present time at all events implies careful study of continental methods. The position, it may be hoped, will be otherwise in the future, for the London centre should serve as a training ground for those who wish to qualify for the charge of similar establishments which are certain to be set up in other large centres of population. As yet the practitioner under whose care the patient is at home has not sufficient knowledge at his disposal to prescribe the physical treatment which is needed, and it is to be borne in mind that no patient will be accepted at the Clinic save with the recommendation of a doctor. The organization of the London Rheumatism Clinic is a turning point in the effective treatment of rheumatic affections in this country and no care could be too great in finding the best method for choosing and training the staff who are to control its destiny.—*The Lancet*, May 18, 1929.

The Treatment of Malignant Bone Tumours

V. Putti, discussing malignant bone tumours, is of the opinion that surgical intervention remains our sheet anchor in their treatment. He has had no experience with radium and a very limited one with Coley's toxins. He has used X-rays in association with surgical treatment, and also as the only method in dealing with inoperable tumours. He has observed the great value of radiation for the relief of pain, especially in diffuse sarcomata. He has gained the impression, however, that in some cases radiation hastened the formation of metastases in the case of soft sarcomata, more especially the endotheliomata. Perhaps, in view of their great sensitiveness to X-rays, these tumours could be cured if they were treated early with intensive doses and a wide field of exposure. In osteogenic sarcoma the author has had some rare successes with tumours of the fibromatous type, but no cure with the periosteal, subperiosteal or telangiectatic. The few successes in the treatment of osteogenic tumours which his statistics show represent cases treated by amputation or disarticulation. As there is no means of judging how much radiation immediately after the amputation contributed to the success, Professor Putti cannot give definite reasons for the results.—(*Surgery, Gynecology and Obstetrics*, March, 1929, p. 324.)

The Value of Tar in the Treatment of Eczema

F. Blut and B. Hajos brings forward evidence to show that non-irritant coal-tar preparations form one of the most useful methods of treating chronic eczema. They recommend a combination of purified tar with camphor and sulphur which is called sulphanthren. This may be used alone as an ointment or added to the zinc oxide ointment usually employed. In acute cases where there is much oedema, tension and pain, tar ointments should not be used until the oedema has subsided.—(*Medizinische Klinik*, February 15, 1929, p. 271.)

Synthalin in Diabetes

The use of insulin in diabetes has certain disadvantages. Although the necessity for injection encourages exact dosage, so far as quantity is concerned, it does not reproduce the conditions of physiological secretion, and where large doses are given the immediate result of its administration may be an excessive reduction of the blood-sugar, followed later by hyperglycaemia when absorption of carbohydrate from the intestine is well under weigh. From almost every point of view it would be preferable to use a drug which could be given by mouth and absorbed slowly with other contents of the alimentary canal, and high hopes were raised a couple of years ago when it was suggested that insulin might find a supplanter in the new German preparation called synthalin. This drug had not been invented ad hoc, but had been evolved during a series of investigations on parathyroid tetany in which it was found that guanidine caused a fall in blood-sugar. This happened only at the cost of poisoning the animal, but aminobutyleneguanidine proved less toxic, and synthalin—so far the most satisfactory of this series of substitution products—was recommended as relatively innocuous.

Synthalin contains two molecules of guanidine, joined by ten CH_2 groups, and its action is shown to be wholly different from that of insulin, as it lacks the essential power of promoting the oxidation of glucose. The first accounts of its effect on patients were nevertheless distinctly favorable. Frank, Nothmann, and Wagner¹ reported that sugar disappeared from the urine in mild cases of diabetes and that the blood-sugar was lowered, though not reduced to normal; in severe cases the dose of insulin could be reduced. They admitted that synthalin did not act quickly enough to benefit patients in coma, and they did not approve its use for children. The Medical Research Council arranged for tests in this country, and preliminary reports from many British hospitals were published in *The Lancet* about a year ago.² These included investigations carried out at St. Bartholomew's by Dr. George Graham and Dr. G. C. Linden, who have now published a more detailed account of their work.³ In 8 patients out of 12 they found that synthalin caused a very definite and apparently beneficial change in the carbohydrate metabolism. In one of the eight 50 mg. of the compound replaced 40-45 units of insulin without the blood-sugar exceeding the normal limit, but in the remaining four it afforded no practical benefit. These results are not so good as those of the early workers, but they are better than some of the others reported. The mode of action, as Graham and Linden point out, is still obscure. Insulin is a natural secretion, and will always lower the blood-sugar if enough is given; synthalin is a foreign chemical and has no action on sugar in vitro. They consider that synthalin must influence the carbohydrate metabolism by modifying cellular activity, and that this action is possibly a minor part of the more general effect that shows itself in toxic symptoms. It may work by depressing the power of the liver (increased in diabetes) to deaminate amino-acids, or its action may be regarded as a slight degree of a poisoning which when severe causes nausea, vomiting, pain, and jaundice. It is, of course, possible that its effect on carbohydrate metabolism is distinct from its toxic action, and that its failures are due to some idiosyncrasy in the patient. If this is so, it offers a parallel to salvarsan, which does not itself kill spirochaetes, but causes the body to generate a lethal substance, and which also fails in some patients, whilst on occasion it produces effects comparable with those of synthalin. The toxic properties of synthalin are, however, a very severe drawback to its employment, for few patients who have experienced them will ever run the risk again. They occurred in 5 out of the 12 cases treated in this test. As prophylaxis against them, Frank has recommended that the dose of synthalin be withheld every fourth day, and A. Adler uses with each dose grs. 3 of sodium dehydrocholate ("decholin") which increases biliary secretion and may perhaps accelerate the excretion of synthalin from the liver.⁴ This preparation was not tested at St. Bartholomew's Hospital, but Graham and Linden suggest that it should always be used, and that the dose should be carefully limited by starting with small amounts and gradually increasing them.

The fate of the sugar which disappears is unknown. It is not found in the liver or muscles as glycogen, and the lactic acid which is formed quickly vanishes again. Synthalin may merely destroy the sugar in the blood as yeast does in the stomach, but the appearance in one patient of a severe ketosis three days after the suspension of treatment suggests that the disappearing sugar was at least exerting an anti-ketogenic influence. To sum up, Graham and Linden say that there is no good evidence that the patients are really the better for having synthalin. Patients who need insulin had better use the natural product if possible; the new synthetic rival has a place only when there is a reason against injection.

¹ Klin. Woch., 1926, v., ii., 2100.

² The Lancet, 1927, ii., 517.

³ Quart. Jour. Med., July, 1928, p. 509.

⁴ The Lancet, Aug. 11, 1928.

The Physician's Library

Recent Advances in Neurology. Brain and Strauss. P. Blakiston's Son and Co., Phila. Pp. 412. 1929. Price, \$3.50.

The authors have collected the more recent advances in neurology and have discussed these advances thoroughly. A great deal of attention is given to treatment, often a much neglected phase. The subjects collected for discussion have a clinical bearing. Some of the subjects given consideration are: The Circulation of the Cerebrospinal Fluid, The Diagnosis of Spinal Block, Intracranial Tumor, Paraplegia and Hemiplegia, The Cerebellum, The Pituitary, Conditional Reflexes, Epidemic Encephalitis, Miscellaneous Therapeutic Advances, etc. The subject is admirably presented.

Aspects of Life and Disease. By Sir Humphry Rolleston. The Macmillan Co., New York, 1929. Pp. 304.

This volume is a part of the Anglo-French Library of Medical and Biological Science. "Concerning Old Age" is the opening chapter and is a valuable contribution. The author discusses the medical aspects of tobacco, some medical aspects of holidays, professional careers, the meaning and methods of success, etc. Sir Humphry Rolleston's writings should be read by every medical practitioner. He has a great deal to say in well chosen words.

Of the Making of Books

The contributions to individual subjects have arrived at a staggering, unprecedented figure. It takes almost a lifetime to consult at present the literature on fashionable diseases, such as diabetes, anemia, cancer, and anaphylaxis. (Professor Laqueur has estimated that the number of publications on insulin alone, from 1923-1928, reached five thousand!) And witness the imposing physical, chemical, and mathematical calculations of modern pathological literature which, for the ordinary mortal, pathologist or physician, are difficult or impossible to comprehend. This is the "Doctor's Dilemma"; to understand, properly judge and command his scientific armamentarium!—*Horst Oertel, M. D., Long Island Medical Journal.*

Ohara's Disease

Dr. Hachiro Ohara has recently reported two cases of tularæmia in a father and son who infected themselves by skinning and dressing a rabbit. The special feature of these cases was that in both the primary site of infection was in the nostril, with local swelling and inflammation and enlargement of lymphatic glands. Ohara recalls that he independently described cases of tularæmia and experimentally transmitted the disease to human beings in 1925. Francis and Moore suspected that these first cases described by Ohara were of the same nature as tularæmia which had been very thoroughly investigated in man by McCoy and Chapin in 1910, by Wherry and Lamb in 1914, and by Francis in 1919 and in a number of subsequent studies in the United States. Francis and Moore proved the identity of the disease in Japan and America by obtaining agglutination of *Bacterium tularensis* with serum from Ohara's cases which he had sent at their request. The clinical form taken by cases of tularæmia is very varied on account of the different means by which infection is acquired and the different sites of inoculation. "Deer-fly fever," in which the primary lesion was on the neck or other exposed part, was known and believed to be due to the bite of *Chrysops discalis* before Pearse described cases in 1910. In the United States 407 cases had been described by 1927 and four types of the disease had been noted. In three of these types there was obvious glandular enlargement which was associated with a papule or ulcer on the skin in 272 cases, with a primary lesion on the conjunctiva in 25, and with no recognized primary lesion in 16; the fourth type was described as typhoidal in nature without glandular enlargement and was observed in 24 cases. The disease in man is most commonly due to handling and skinning infected rabbits and hares. It is said to occur over a considerable area in Japan and is very widely distributed in America but so far is unknown in Europe. *B. tularensis* was discovered by McCoy and Chapin in ground squirrels in 1912. Francis has summarized the history of the disease in the De Lamar lectures for 1926-27. He points out among the special features of the disease that it is extremely infectious, especially for laboratory workers, that the serum of patients agglutinates *Bacillus abortus* and *B. melitensis* as well as *Bacterium tularensis*, that the bacterium can penetrate the uninjured human skin and that the number of species of naturally susceptible animals and of insects which can act as vectors is very large.—*The Lancet*, June 1, 1929.